IRMA WorkStation for Windows

User's Guide

DCA

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Before You Begin

The *IRMA WorkStation for Windows User's Guide* contains the information you need to install, configure, and monitor the IRMA™ WorkStation for Windows software. It also provides guidelines for conducting 3270 display emulation, 3270 printer emulation, file transfers, and asynchronous terminal emulation.

Intended audience

This guide is written for the following readers:

● Users (or system administrators) responsible for setting up, configuring, monitoring, and operating IRMA WorkStation for Windows

● Users who want to communicate with IBM® mainframes using 3270 emulation or with IBM mainframes or peer computers using APPC

● Users who want to communicate with mainframes using asynchronous terminal emulation

● Managers who want a basic understanding of IRMA WorkStation for Windows and its features

Before reading this guide, you should have a knowledge of the following operating environments:

● Microsoft® Windows™ version 3.1

● DOS, version 3.3 or newer

Need help?

If you have questions while using the IRMA WorkStation for Windows user interface, you can find the information you need in the on-line help. On-line help describes the purpose of a pull-down or dialog box; the available push-buttons, list boxes, and edit boxes; and, where applicable, step-by-step instructions.

The information in the on-line documentation is both descriptive and instructive. That is, instead of merely stating the choices available, the on-line help guides you in making the correct choice.

When you're in the on-line system, you can choose Using Windows Help from the Help pull-down to receive help on the Microsoft Windows Help system. It explains the information that is available and how to move around in the on-line help panels.

The on-line help system also contains keyboard maps and error messages. To access the default keyboard maps, click on the 3270 Terminal icon and choose Keys Help from the Help pull-down. To get information about an error message generated by the 3270 Terminal Emulator, choose Help Index from the Help pull-down. Once the list of on-line help topics is displayed, click on Error Messages.

For help in using IRMA WorkStation for Windows, you should read the information about on-line help in Chapter 1, "Introducing IRMA WorkStation for Windows," in this manual.

Using the DCA bulletin board

You can find the latest information about IRMA WorkStation for Windows and communicate with other DCA® users with the DCA Connection Bulletin Board System (BBS). You can learn about product announcements, news, and technical specifications; private and public e-mail; technical support, technical tips, product histories; and a private/public user's file exchange for sending files to and from DCA engineers and other users.

Registration and access to the DCA Connection are free to all users by dialing this number with a modem and using the IRMA WorkStation for Windows Async Terminal application, DCA Crosstalk®, or other communications software:

(404) 740-8428

Set your communications software parameters as follows:

Data:	8
Parity:	N
Stop bits:	1
Speed:	1200, 2400, or 9600 (available with V.32)
Emulation:	ANSI or TTY

About this guide

The *IRMA WorkStation for Windows User's Guide* contains the following chapters:

Chapter 1, "Introducing IRMA WorkStation for Windows," gives a brief overview of program features, provides hardware and software requirements, describes connectivity options, and explains how to use the on-line help.

Chapter 2, "Installing and Configuring the Software," provides an overview of installation and configuration concepts.

Chapter 3, "Configuring for 3270 Emulation," explains how to configure your software based on your communications environment.

Chapter 4, "Conducting 3270 Display Emulation," provides an overview of 3270 display emulation features. It also includes guidelines for starting a display emulation session and running HLLAPI programs.

Chapter 5, "Conducting 3270 Printer Emulation," explains how to set up printer options, configure the printer, activate and deactivate a printer emulation session, and use the printer control panel.

Chapter 6, "Transferring Files," provides guidelines for starting the File Transfer application, initiating a file transfer, monitoring the status of a file transfer, stopping a file transfer, and setting up the file transfer environment.

Chapter 7, "Using the Keyboard Editor," explains how to set up a keyboard or QuickPad™. You can also find information to help you use the Key List Editor and the Macro Editor.

Chapter 8, "Using Asynchronous Terminal Emulation," explains how to communicate with DEC® VAX® minicomputers and other hosts by emulating a VT™52, VT100, VT220, VT320, IBM 3101, or TTY terminal.

Chapter 9, "Using QuickExec to Start Applications," explains how to use QuickExec™ to set up a profile that allows you to start multiple applications in one step.

Chapter 10, "Recording Scripts with QuickScript," describes how to use QuickScript™ to record the keystrokes you enter for such communications functions as logging on to the host and explains how to save your recorded keystrokes in a script for future use.

Chapter 11, "Using Diagnostics," describes how to open and display log and trace files, how to start a log or trace session, and how to customize log and trace output. You can also find information about the audit and error messages in your log file.

Appendix A, "Status Line Messages," documents the area in the 3270 status line.

Appendix B, "Solving Problems," explains some common problems that can occur with IRMA WorkStation for Windows and how to troubleshoot them.

Appendix C, "Modem Characteristics," provides information for using a modem.

Appendix D, "SYSTEM.INI Parameters," describes the parameters used by IRMA WorkStation for Windows in the SYSTEM.INI file.

Appendix E, "International Considerations," explains the country codes and languages supported by IRMA WorkStation for Windows.

Appendix F, "Using IRMA WorkStation for Windows with Other LAN Products," describes the IBM PC LAN Program and 3Com® 3+SHARE support.

Appendix G, "Using APL," gives an overview of APL and describes the APL character set and keyboard template supported by IRMA WorkStation for Windows.

Customer support information and an index are also included in this guide.

Documentation conventions

The following documentation conventions are used in this guide:

bold
In command lines, bold represents information that you should enter exactly as shown.

[ ]
In command lines, square brackets indicate an option. To include an option, type only the information inside the brackets. Do not type the brackets unless they appear in bold.

italics
Italics represent variable information. In command lines, do not enter the words themselves in the command; enter the information they represent.

key
A key name in a box, for example, Enter, refers to a specific key on the keyboard.

If you have remapped the function originally mapped to the key, substitute the new key or key combination for the original.

key1 key2
Boxed keys displayed next to each other are called combination keystrokes. To enter combination keystrokes, press one key and hold it down while you press one or more other keys. Release all the keys at the same time.

|
The | symbol separates command choices that are mutually exclusive, for example, SEND|RECEIVE.

X'*nnn*'
This represents hexadecimal digits.

Note:
This signifies important additional information.

▼ **Caution:**
This symbol means that a failure to follow the recommended procedure could result in a loss of data or damage to machinery or related products.

■
This signifies the end of a note or a caution.

Common abbreviations

The following is an alphabetical list of common abbreviations used in this guide.

APA	All Points Addressable
API	Application programming interface
APL	A Programming Language
APPC	Advanced Program-to-Program Communication
ASCII	American Standard Code for Information Interchange
CCU	Communications control unit
CICS	Customer Information Control System
CMS	Conversational Monitor System
CSV	Common Service Verb
CTS	Clear to send
CUA	Common User Access
CUT	Control unit terminal
DDE	Dynamic Data Exchange
DFT	Distributed function terminal
DLC	Data link control
DSR	Data set ready
DTR	Data terminal ready
EAB	Extended attribute byte
EBCDIC	Extended binary-coded decimal interchange code
EHLLAPI	Extended Edition High-level Language Application Programming Interface
FEP	Front-end processor
HLLAPI	High-level Language Application Programming Interface
INT14	Interrupt 14
IP	Internet Protocol
IPX	Internetwork packet exchange
ISA	Industry Standard Architecture
KB	Kilobyte
LAN	Local area network
LU	Logical unit
MB	Megabyte
MDI	Multiple document interface
ODI	Open Data-Link Interface
PU	Physical unit
RAM	Random access memory
RTM	Response time monitor
SAA™	Systems Application Architecture®
SCA	Synchronous Communications Adapter
SDLC	Synchronous Data Link Control
SISL™	Standard IRMA Script Language
SNA	Systems Network Architecture
SSCP	System services control point

SPX	Sequenced packet exchange
TCP	Transmission Control Program
TP	Transaction program
TSO	Time sharing option
VT	DEC VT series terminal
VTAM	Virtual Telecommunications Access Method

Software developer's tool kits

With IRMA WorkStation for Windows you can purchase two optional tool kits: the DCA HLLAPI Software Developer's Tool Kit and the DCA Distributed Application Developer's Tool Kit. The tool kits let you do the following:

● Improve interaction with existing host applications by writing programs that use HLLAPI

● Develop peer-to-peer applications quickly and easily using DCA APPC

Each tool kit contains programmer's guides and sample source code. To order the tool kit you need, contact DCA Developer Services at (404) 740-0001.

Related publications

This guide does not attempt to provide a detailed explanation of the products, architectures, or standards developed by other companies or organizations. The following paragraphs indicate where to look for additional information.

For information on Microsoft Windows, refer to the documentation provided by Microsoft.

For information on DOS, refer to the documentation provided by your DOS vendor.

For information on CUA, refer to the *IBM Systems Application Architecture Common User Access: Advanced Interface Design Guide*.

For information on IRMALAN/EP, refer to the appropriate administrator's guide for your environment (DFT, SDLC, or 802.2).

For information on IRMA Graphics for Windows, refer to the *IRMA Graphics for Windows User's Guide*.

For information on DCA FT/Express™, refer to the following documents:

- *FT/Express CICS Host Installation Guide*

- *FT/Express CMS Host Installation Guide*

- *FT/Express TSO Host Installation Guide*

- *FT/Express Host-Initiated File Transfer User's Guide*

- *FT/Express DOS File Transfer User's Guide*

For information on SNA, 3270 information display system products, and LANs, refer to these IBM documents:

- *IBM Information Display System: 3274 Control Unit Display Station: Operator's Guide*

- *IBM 3270 Information Display System: 3274 Control Unit Description and Programmer's Guide*

- *IBM 3270 Information Display System: Color and Programmed Symbols*

- *IBM 3270 Information Display System: 3174 Control Unit Functional Description*

- *IBM 3274 Control Unit Reference Summary*

- *IBM 9370 LAN Token Ring Support*

- *IBM Local Area Network: Technical Reference*

- *IBM Systems Network Architecture: Concepts and Products*

- *IBM Systems Network Architecture: Technical Overview*

- *IBM Systems Network Architecture: Transaction Programmer's Reference Manual for LU Type 6.2*

For information on CICS, CMS, or TSO, refer to the appropriate IBM publications.

For information on Novell NetWare for SAA gateway, refer to your Novell NetWare documentation.

Introducing
IRMA WorkStation
for Windows

This introduction covers the following:

- What is IRMA WorkStation for Windows?

- Hardware and software requirements

- What connectivity options are provided

- What applications are provided

- How to develop APIs

- How to use your documentation

- Where do you go from here?
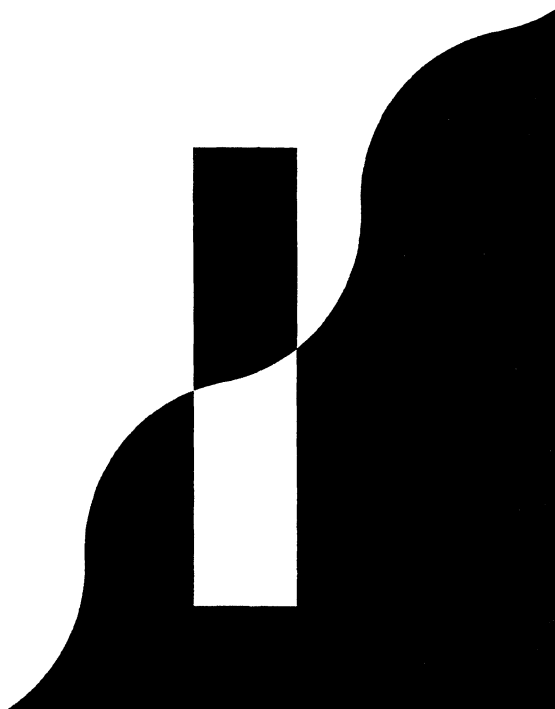
What is IRMA WorkStation for Windows?

IRMA WorkStation for Windows is communications software that allows a PC running Microsoft Windows 3.1 to communicate directly with a host or peer computer. You can connect to the host computer across an SNA or TCP/IP network as a stand-alone workstation, or through an IRMALAN™/EP or a Novell® NetWare® for SAA gateway as a client PC.

You can use IRMA WorkStation for Windows to emulate a 3270 terminal (SNA and TCP/IP networks), to transfer files between your PC and the host, to emulate a host printer (SNA networks only), and to communicate with Hewlett-Packard® (HP®), or DEC hosts.

IRMA WorkStation for Windows adheres to the latest standards and protocols in the industry, including IBM node type 2.1 and LU 6.2, which work together to provide APPC capabilities. (APPC is not supported in TN3270, IRMA-LAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA environments.)

IRMA WorkStation for Windows provides terminal emulation, network functionality, and other value-added features.

Emulation features

IRMA WorkStation provides the following emulation features:

- Full-featured 3270 display emulation (Models 2–5) with a multiple document interface, or MDI, and 3287 printer emulation (LU 1 and LU 3)—as many as five concurrent sessions, display or printer.

- Multiple, concurrent file transfers using DCA FT/Express, DCA IRMALINK®, IBM IND$FILE, or PS/CICS file-transfer software.

- Terminal emulation through the serial port on the PC.

- Support for All Points Addressable (APA) and Programmed Symbols (PS) graphics when using IRMA Graphics for Windows.

- Support for APL display and TrueType fonts (fixed pitch only).

- Color remapping for each 3270 display session.

- Cutting, copying, and pasting text from 3270 display sessions to a defined format.

- Complete extended attribute byte (EAB) support.

- Support for the DCA IRMAkey/3270®, Memorex-Telex, Key Tronic®, and IBM 122-key keyboards.

Network features

IRMA WorkStation provides the following network support:

● IRMALAN gateway connections using IBM NETBIOS-compatible or Novell NetWare IPX/SPX LAN software.

● Multiple gateway searches for IRMALAN NETBIOS and IRMALAN IPX/SPX connections.

● IRMALAN gateway hot backup.

● Novell NetWare for SAA gateway connections using IPX/SPX LAN software.

● Support for a TN3270 connection across a TCP/IP network through FTP®, Novell LAN WorkPlace, Wollongong®, and Microsoft® LAN-MAN/3Com® stacks.

● Support for APPC and Common Service Verb APIs (not available for TN3270, IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA connections).

● Support for HLLAPI.

● Error and trace logging.

● RTM host response-time tracking for each display session (not available for TN3270, IRMALAN NETBIOS, or IRMALAN IPX/SPX connections).

● Communications with IBM NetView® through 3270 user alerts, (not available for TN3270, IRMALAN NETBIOS, or IRMALAN IPX/SPX connections).

Value-added features

IRMA WorkStation provides the following value-added features for increasing your productivity:

● Script-creation capabilities, through QuickScript, that include recording keystrokes and using Dynamic Data Exchange (DDE).

● Graphical keyboard remapping using the Keyboard Editor.

● Productivity aids such as QuickExec, QuickHit™, QuickBar, QuickSAA, and QuickPad.

● Support for auto-scaling fonts and auto-sizing windows.

Hardware requirements

IRMA WorkStation for Windows requires the following hardware:

● A COMPAQ® 286/386/486, IBM PC/AT®, IBM PS/2® (except Model 30), or compatible PC.

● A video adapter and monitor supported by Microsoft Windows 3.1, including but not limited to the following:
–IBM EGA and monitor or compatible
–IBM VGA and monitor or compatible (or XGA in VGA mode)
–COMPAQ video interface with dual mode monitor

● A minimum of 2 MB of system RAM; however, we suggest you have 4 MB of RAM.

● A minimum of 9 MB of free hard disk space.

● A minimum of 1 MB of system RAM if you are using IRMA Graphics for Windows. Additional RAM will improve performance if you are displaying multiple complex graphics.

● A PC keyboard supported by Microsoft Windows 3.1.

● A printer supported by Microsoft Windows 3.1 (optional).

● A mouse or compatible pointing device supported by Microsoft Windows 3.1 (required only if you plan to use a QuickPad or the Keyboard Editor).

● At least one communications adapter. Table 1-1 lists the adapters supported by IRMA WorkStation for Windows.

Table 1-1. Communications adapters supported by IRMA WorkStation for Windows

Connection type	Supported adapters
CUT	DCA IRMA 3270 Pocket Adapter
	DCA IRMA 3® Convertible Adapter—one adapter offers a choice of coaxial or twisted-pair cabling and fits PCs with industry-standard (ISA) and Micro Channel® architecture
	DCA IRMA 2 Adapter—separate adapters for ISA and Micro Channel architecture PCs

Table 1-1. Communications adapters supported by IRMA WorkStation for Windows

Connection type	Supported adapters
CUT (cont.)	IBM 3278/79 Emulation Adapter (including Rev B) (ISA)
	IBM 3278/79 Advanced Emulation Adapter (including Rev B) (ISA)
	IBM 3270 Connection Adapter, Model A (including Rev B) (Micro Channel)
	IBM 3270 Connection Adapter, Model B (including Rev B) (Micro Channel), using only the default address of CE00
DFT	DCA IRMA 3270 Pocket Adapter
	DCA IRMA 2 Adapter
	DCA IRMA 3 Adapter
	IBM 3270 communications adapter
	IBM 3278/3279 communications adapter
SDLC	DCA Synchronous Communications Adapter (SCA)—separate adapters for ISA and Micro Channel architecture PCs
	IBM SDLC Adapter (ISA)
	IBM Multiprotocol Communications Adapter/A (Micro Channel)
802.2	DCA IRMAtrac™ Token-Ring Adapter/Convertible—one adapter fits both ISA and Micro Channel architecture PCs
	IBM Token-Ring Adapter (ISA)
	IBM Token-Ring Adapter II (ISA)
	IBM Token-Ring Adapter/A (Micro Channel)
	IBM Token-Ring 16/4 Adapter (ISA)
	IBM Token-Ring 16/4 Adapter/A (Micro Channel)
	Proteon 4, 16, or 4/16 Mbps Token-Ring Adapter
	Madge 4, 16, or 4/16 Mbps Token-Ring Adapter

Table 1-1.   Communications adapters supported by IRMA WorkStation for Windows

Connection type	Supported adapters
802.2 (cont.)	Any Ethernet adapter supported by the IBM LAN Support Program
TN3270	Any token-ring or Ethernet adapter that is supported by an FTP (version 2.05pl4 or newer), Novell LAN Work-Place, Wollongong Pathway Access, or Microsoft LAN-MAN/3COM TCP/IP protocol stack
IRMALAN/*EP* gateway	Any LAN adapter that has IBM NETBIOS-compatible or Novell IPX/SPX support
NetWare for SAA gateway	Any LAN adapter supported by NetWare

Software requirements

The software requirements for your workstation vary depending on the type of connection you are using to communicate with the host. The following paragraphs list the software requirements for each connection type.

Stand-alone connections

If you are using a CUT, DFT, SDLC, 802.2, or TN3270 stand-alone connection, IRMA WorkStation for Windows requires the following software:

- MS-DOS®, PC-DOS, or COMPAQ MS-DOS 3.3 or newer (including DOS 5.0).

- Microsoft Windows 3.1 running in standard or enhanced mode.

- If you intend to use FT/Express to transfer files, your host application (available from DCA) must be version 2.0 or newer.

IRMALAN gateway connections

If you are using an IRMALAN NETBIOS or IRMALAN IPX/SPX connection, IRMA WorkStation for Windows requires the following software:

- MS-DOS®, PC-DOS, or COMPAQ MS-DOS 3.3 or newer (including DOS 5.0).

- Microsoft Windows 3.1 running in standard or enhanced mode.

- LAN adapter support software.

- The following drivers if you want to support an IRMAtrac™ token-ring connection in Windows:

  EAGLELLC.BIN   6/13/91 or newer
  TOK380.DCA   6/17/91 or newer

- IRMALAN/*EP* gateway software installed at another PC.

- Any software required for NETBIOS or IPX/SPX LAN support.

  If you are using an IRMALAN IPX/SPX connection, you must also have the NWIPXSPX.DLL driver (11/21/91 or newer), available on NetWire.

  To run IRMA WorkStation for Windows on a 286 PC with an IRMALAN IPX/SPX connection, you must run TBMI2.COM before starting Windows.

- If you intend to use FT/Express to transfer files, your host application (available from DCA) must be version 2.0 or newer.

NetWare for SAA connections

If you are using a NetWare for SAA connection, IRMA WorkStation for Windows requires the following software:

- MS-DOS®, PC-DOS, or COMPAQ MS-DOS 3.3 or newer (including DOS 5.0).

- Microsoft Windows 3.1 running in standard or enhanced mode.

- LAN adapter support software.

- Novell NetWare 3.11 or newer. Make sure you are using the correct version numbers for the following files:
  –IPX.COM 3.10 or newer, if you are running the WSGEN.EXE program. If you are running IRMA WorkStation for Windows on a 486 PC, we recommend that you run the ODI driver, instead of the WSGEN.EXE program, to improve performance.
  –LSL.COM 1.2 or newer and IPXODI.COM 1.2 or newer, if you are running the ODI driver.
  –NETX.COM 3.22 or newer for PCs using conventional memory.
  –EMSNETX.EXE 3.22 or newer for PCs using expanded memory.
  –XMSNETX.EXE 3.22 or newer for PCs using extended memory.

- If you intend to use FT/Express to transfer files, your host application (available from DCA) must be version 2.0 or newer.

For instructions on installing the DOS workstation or DOS ODI workstation software, contact the system administrator for your NetWare for SAA gateway.

Connectivity options

IRMA WorkStation for Windows provides a variety of stand-alone and gateway connections. Stand-alone PCs running IRMA WorkStation for Windows can access an IBM host using an SNA or TCP/IP network. With an SNA network, you can use traditional direct connections, which include CUT, DFT, SDLC, or token-ring (802.2) connections or peer connections through APPC. With a TCP/IP network, you can use any of the supported stacks, giving you a peer (TN3270) connection.

Client PCs on a Novell NetWare for SAA gateway can access an IBM host using an 802.2 or SDLC connection. With an IRMALAN/*EP* gateway connection, client PCs can access the host through a DFT, SDLC, or 802.2 gateway on an NETBIOS or IPX/SPX LAN.

If you want to connect to a DEC VAX® or compatible minicomputer, you can use one of several types of emulators supplied with IRMA WorkStation for Windows. You can use a direct connection or a modem. Or you can connect to the host using application programming interfaces (APIs), which include INT14 and Novell Asynchronous Services Interface (NASI).

Figure 1-1 illustrates the connectivity options available with IRMA WorkStation for Windows.
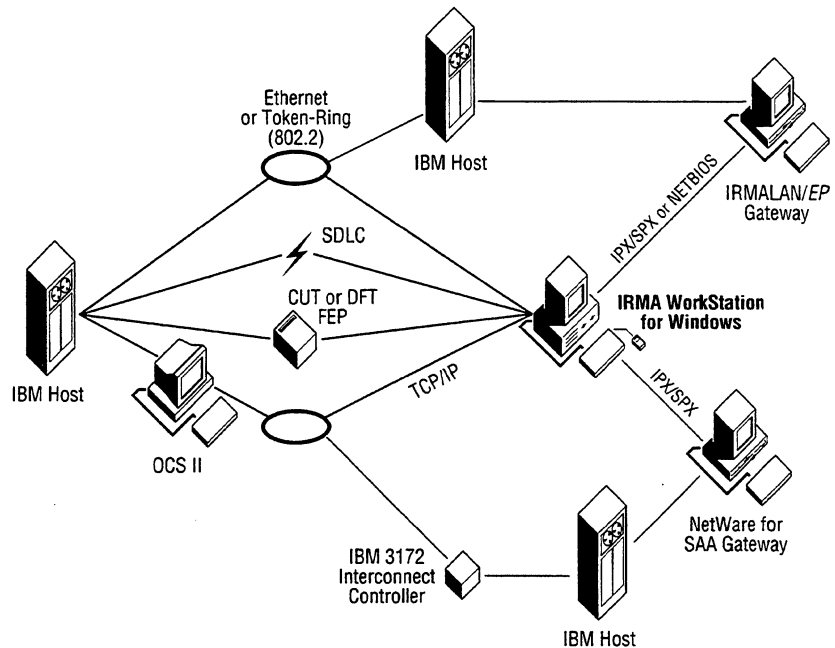
Figure 1-1. **Example of IRMA WorkStation for Windows connectivity options**

The following sections describe these connectivity options in detail.

CUT

IRMA WorkStation for Windows supports direct, single-session (CUT) connectivity to IBM 3174/3274 or 43xx control units.

DFT

IRMA WorkStation for Windows supports multisession DFT connectivity for a direct connection to an IBM 3174/3274 control unit. The software also provides DFT connectivity when used on a client connected to an IRMALAN/*EP* DFT gateway.

SDLC

IRMA WorkStation for Windows supports direct, multisession SDLC connectivity to a 37xx front-end processor, through an SDLC adapter and half-duplex synchronous modems, over switched or leased lines. The software also provides SDLC connectivity when used as a client of an IRMALAN/*EP* SDLC gateway.

Token ring

IRMA WorkStation for Windows supports stand-alone, multisession 802.2 connectivity with host and peer computers across a token-ring or Ethernet LAN through the IEEE standard 802.2 data link control protocol. The software also provides token-ring connectivity when used as a client of an IRMALAN/*EP* 802.2 gateway or a NetWare for SAA gateway. For stand-alone connectivity, you can use the following connections:

- A token ring attached to a 37xx front-end processor connected to a host

- A token ring attached to a 3174 control unit connected to a 37xx front-end processor and through the front-end processor to a host

- A token ring attached to a 9370 CCU connected internally to the 9370 host

- A token ring attached to a 3174-xL control unit or 3174 local controller directly connected through a channel to a host

IRMALAN NETBIOS and IPX/SPX

In addition to connecting to an IBM host as a stand-alone workstation, you can connect to a host as a client PC through an IRMALAN/*EP* NETBIOS or IPX/SPX gateway. A PC configured as an IRMALAN gateway controls the link to an IBM host. The PC is equipped with software to control the host link and hardware for controlling the host communications. Like any other PC on the LAN, the gateway PC must also contain LAN hardware and any necessary LAN software to support either a Novell IPX/SPX interface or an IBM-compatible NETBIOS session. DCA provides combinations of hardware and software that allow a PC to function as a gateway to an IBM 3270 network.

The following gateways support IRMA WorkStation for Windows:

- IRMALAN/*EP* DFT Gateway, which uses a fixed coaxial cable connection to an IBM 3274 or 3174 Control Unit

- IRMALAN/*EP* SDLC Gateway, which uses either a dial-up or leased line connection to the SNA host

- IRMALAN/*EP* 802.2 Gateway, which communicates with the host either directly or through an IBM 3720/25/45 communications controller or an IBM 3174 Control Unit on the LAN with the IBM token-ring option

The LAN administrator works with the host administrator to install the gateway. They determine which gateways can be accessed by which users.

NetWare for SAA

IRMA WorkStation for Windows uses Novell NetWare IPX/SPX LAN software to access a NetWare for SAA gateway. This gateway manages an access point into a 3270 network. Client PCs on a NetWare for SAA gateway can access an IBM host using either an 802.2 or SDLC connection, and can operate any combination of five simultaneous 3270 terminal emulation and printer emulation sessions.

TN3270

IRMA WorkStation for Windows allows TN3270 users to access an IBM host across a TCP/IP network. TN3270 is a Telnet protocol that sends information from your terminal to the host via a TCP/IP network. Note that the TN3270 protocol can send only terminal data to the host; printer information currently can not be sent.

With a TCP/IP network, you can use any of the supported stacks (FTP, Novell LAN WorkPlace, Wollongong, and Microsoft LANMAN/3Com) giving you a peer (TN3270) connection.

Asynchronous

You can use asynchronous terminal emulation to share information, computing power, and resources with other PCs and with leading minicomputer systems such as VAX® computers from Digital Equipment Corporation. You can conduct terminal emulation and file transfers between your PC (through its serial port) and a host computer. IRMA WorkStation for Windows emulates several DEC® terminal types as well as an IBM 3101 terminal and a TTY terminal. For asynchronous file transfer, the software supports the XMODEM, YMODEM, and Kermit™ file-transfer protocols. IRMA WorkStation for Windows also supports the Interrupt 14 Redirector and the NetWare® Async Server Interface (NASI).

About your applications.

This section explains the applications that come with IRMA WorkStation for Windows. You can install all of them or only the specific ones you need. Each application can be started either by using a pull-down option in the 3270 Terminal application or by choosing an associated icon that is added to the IRMA WorkStation for Windows group window when the installation is complete. You can also use the toolbox icon in the 3270 Terminal application to start the 3270 Printer, Keyboard Editor, and Diagnostics applications. A description of each application provided with IRMA WorkStation follows.

3270 Configurator

Use this application to configure connections, 3270 sessions, and APPC (LU 6.2); to choose a host character set; to select a keyboard; to configure the log file; and to choose a network management connection. See Chapter 3, "Configuring for 3270 Emulation," for more information.

3270 Printer

Use this application to start, use, and customize 3270 printer emulation. See Chapter 5, "Conducting 3270 Printer Emulation," for more information.

Note: Printer emulation is not available for CUT, TN3270, and asynchronous environments. ■

3270 Terminal

Use this application to start, use, and customize terminal emulation. You can capture emulation screens to the disk or the printer, edit screen contents, and run HLLAPI programs (in a 3270 environment). See Chapter 4, "Conducting 3270 Display Emulation," for more information.

Async Terminal

Use this application to start, use, and customize asynchronous terminal emulation. See Chapter 8, "Using Asynchronous Terminal Emulation," for more information.

APPC

Use this to start an SNA (LU 6.2) session that can be used by APPC transaction programs. The session is automatically started for you. For information about APPC, see the *DCA APPC Programmer's Guide* provided in the optional DCA Distributed Application Developer's Tool Kit.

Note: APPC support is not available for CUT, IRMALAN NETBIOS, IRMALAN IPX/SPX, TN3270, and NetWare for SAA connections. ■

Diagnostics

Use this application to monitor workstation activity. You can view, filter, and print configuration, log, and trace files. See Chapter 11, "Using Diagnostics," for more information.

Note: The Diagnostics utility is not available in CUT, IRMALAN NETBIOS, IRMALAN IPX/SPX, and TN3270 environments, except to print configuration files and profiles. For more information, see Chapter 11. ■

File Transfer

Use this application to customize, start, and monitor file transfer sessions. You can transfer files in a CICS, VM/CMS, or MVS/TSO environment using DCA FT/Express, IBM IND$FILE, DCA IRMALINK, or PS/CICS file-transfer software. Not all file transfer programs are appropriate for every host environment. See Chapter 6, "Transferring Files," for more information.

Keyboard Editor

Use this application to customize your keyboard. You can rearrange the 3270 keyboard characters and functions to be consistent with applications you frequently use or to make a key combination easier to remember. See Chapter 7, "Using the Keyboard Editor," for more information.

QuickExec

Use QuickExec to create a list of applications that you can start simultaneously by choosing a QuickExec icon from the group window. You can give your icons unique names; you can even assign applications to the default QuickExec icon, QuickExec:Start, that is provided with the software. See Chapter 9, "Using QuickExec to Start Applications," for more information.

QuickExec:Start

After you run the Setup program, the QuickExec:Start icon is displayed as an example in the IRMA WorkStation for Windows group window. You can modify the properties associated with this icon to specify the path of an existing QuickExec profile, or you can add a different icon using the QuickExec application. Each QuickExec profile you configure must have an associated icon before you can use it. You can have multiple QuickExec icons. Refer to Chapter 9, "Using QuickExec to Start Applications," for more information.

QuickScript

Use this application to record keystrokes in a script or to edit, save, compile, and run scripts created using DCA Standard IRMA Script Language (SISL). You can use the scripts to automate many routine 3270 emulation activities. You can even create scripts that exchange information with other applications. See Chapter 10, "Recording Scripts with QuickScript," and the *DCA Script User's Guide* for more information.

Setup

Use this application to install the software. See Chapter 2, "Installing and Configuring the Software," for more information.

Developing APIs

You can develop and use distributed applications through application programming interfaces. Communications APIs contain functions that your application programs can use to perform specific tasks, such as exchanging data with programs running on other computers.

APIs include the following:

● HLLAPI

● APPC

● Common Service Verbs

Using HLLAPI

You can run programs that use the Windows HLLAPI verb set provided in the optional DCA HLLAPI Tool Kit. These programs let you simulate the actions of a 3270 user by entering data and handling data received from the host.

DCA's implementation of HLLAPI is compatible with IBM's OS/2 Extended Edition version 1.3 EHLLAPI. For more information on HLLAPI, see the *DCA HLLAPI Programmer's Guide* in the optional DCA HLLAPI Software Developer's Tool Kit.

Using APPC

You can develop distributed applications across an SNA network using APPC APIs. APPC uses IBM's LU 6.2 communications protocol to enable transaction programs, referred to as TPs, to communicate on a program-to-program basis across IBM host, minicomputer, and PC environments.

The DCA implementation of APPC supports the verb set of IBM's OS/2 Extended Edition APPC, version 1.3. For more information on APPC, see the *DCA APPC Programmer's Guide* in the optional DCA Distributed Application Developer's Tool Kit.

Note: APPC support is not available in CUT, IRMALAN NETBIOS, IRMALAN IPX/SPX, TN3270, and NetWare for SAA environments. ■

Using Common Service Verbs

Common Service Verbs provide general services for application programs that can be used independently or with APPC and HLLAPI. You can use Common Service Verbs for character-set conversion from ASCII to EBCDIC and vice versa, trace control, message logging, and transmission of alerts to IBM's Net-View®.

The DCA implementation of Common Service Verbs is compatible with IBM's OS/2 Extended Edition Common Services API, version 1.3. For more information on Common Service Verbs, see the *DCA Common Service Verbs Programmer's Guide* in the optional DCA Distributed Application Developer's Tool Kit.

Note: Common Service Verbs are not supported in CUT, IRMALAN NETBIOS, IRMALAN IPX/SPX, TN3270, and NetWare for SAA environments. ■

How to use your documentation

IRMA WorkStation for Windows provides two types of documentation to help you use the software—this user's guide and on-line help. The guide presents general information for completing tasks, while the on-line help provides detailed descriptions of dialog boxes and the choices you can make when completing them.

Using this guide

This guide is intended to acquaint you with the features of IRMA WorkStation for Windows and explain how to install the software. The guide also helps you configure for 3270 emulation, set up profiles, conduct 3270 display and printer emulation, transfer files, remap the keyboard, run multiple applications by choosing a single icon, use asynchronous terminal emulation, and monitor activity. Installing is a prerequisite to all other activities. Depending on your environment, configuring the software may be a prerequisite, that is, if you don't want to use the defaults provided.

This first chapter introduces significant components and explains connectivity features as well as hardware and software requirements. It also explains how to use the on-line help. Most of the information in this chapter is not available on line.

When you are familiar with the features, turn to Chapter 2, "Installing and Configuring the Software." This chapter presents important information about installing the software. It also provides guidelines to help you determine whether or not you need to configure the software. You should read this chapter before you begin the installation.

Once you have the software installed, you can configure your mainframe connections, if required. You will find instructions for completing this task in Chapter 3, "Configuring for 3270 Emulation," and also in the on-line help. Chapter 3 and all subsequent chapters in this guide should be used along with the on-line help.

The appendixes in this guide contain supplemental material to help you use IRMA WorkStation for Windows.

Using on-line help

You can find most of the information you need about IRMA WorkStation for Windows right on line. Whatever you are doing, you can ask for help. For example, you can use on-line help when you have a question about specific dialog box items or need assistance in completing a task. Glossary terms are also provided for you.

You can access on-line help from the Help pull-down on an action bar or by choosing the Help pushbutton in a dialog box. The information is organized so that when you ask for help, you get answers that relate to what you are doing.

Accessing Help from a dialog box

Each application dialog box contains a Help pushbutton. Choose this push-button to access specific information and instructions about the dialog box and the items in it.

Accessing Help from an action bar

You can see an overview of the application you are using by accessing the Help pull-down from an action bar. Table 1-2 describes the Help pull-down options.

Table 1-2. Help pull-down options

Option	Explanation
Using Windows Help	This option provides information about Microsoft Windows Help. Look here for instructions on sizing and moving windows so you can view an application and related help information side by side.
Help for *application*	This option displays general information about the specific application you are using.
Keys help	This option provides an explanation of the accelerator keys used to make quick choices from pull downs and dialog boxes. For the 3270 Terminal application, the Keys help feature also lists key assignments for 84-key, 101/102-key, 122-key, and 3191-style keyboards.

Table 1-2. Help pull-down options (cont.)

Option	Explanation
Help index	This option presents an alphabetical listing of help topics to help you find specific information. While viewing Help, you can access the list of topics by choosing the Contents button. For more information, click on any topic contained in the list.
	You can also use the keyword search feature to find information. Simply choose the Search button and follow the instructions on the dialog box.
About	This option displays the name and release number of the application you are using. It also displays a copyright statement.

Finding more information

Once you are in the Help system, you can display additional information about some topics or go to related topics. Look for the distinctive color and high-lighting. To access this information, simply click on a highlighted item. Additional details or step-by-step instructions are displayed.

To go back to the main application, close the Help window.

Viewing Help and an application window at the same time

You can view an application window and its related Help instructions at the same time. This is useful if you want to view Help while you perform a task. To do so, follow these steps:

1   Access Help by selecting the Help pushbutton in a dialog box or by selecting an option from the Help pull-down.

2   If the Help window is full-screen size, reduce it by choosing the restore button in the upper-right corner of the Window.

3 ·   Resize the Help window by dragging the top, bottom, sides, and corners.

4   Move the Help window to the desired location by dragging the title bar.

5   Activate the application window by clicking on it.

6   Resize and reposition the window so that it does not overlap the Help Window. Do this by repeating steps 2 to 4.

Choose Using Windows Help from the Help pull-down to access the Microsoft Windows Help system for complete instructions on viewing on-line help.

Where do you go from here?

Each chapter of this user's guide is devoted to an individual aspect of IRMA WorkStation for Windows. We recommend that you continue with Chapter 2, "Installing and Configuring the Software," which contains information you need to install the software. It also provides guidelines to help you determine whether or not you need to configure the software.

When you have completed the software installation, continue with Chapter 3, "Configuring for 3270 Emulation." This chapter, used with the on-line help, explains how to configure the workstation. If, however, you are using CUT or DFT connectivity, you can use the configuration defaults provided with the software and do not need to read this chapter.

Once you have installed and configured IRMA WorkStation for Windows, you can read the remaining chapters at your convenience. Each chapter is intended to supplement the information you find in the on-line help. Table 1-3 guides you to the information you need.

Table 1-3. Where to look in this user's guide

To learn about...	Read...
Conducting 3270 display emulation	Chapter 4
Conducting 3270 printer emulation	Chapter 5
Configuration defaults	Chapter 2
Configuring for 3270 emulation	Chapter 3
Diagnostics	Chapter 11
Hardware and software requirements	Chapter 1
Installing the software	Chapter 2
International considerations	Appendix E
Key features	Chapter 1
Modem characteristics	Appendix C
On-line help	Chapter 1
Recording scripts	Chapter 10
Remapping the keyboard	Chapter 7
Starting applications using QuickExec	Chapter 9

Table 1-3. Where to look in this user's guide (cont.)

To learn about...	Read...
SYSTEM.INI parameters	Appendix D
The 3270 status line	Appendix A
Transferring files	Chapter 6
Using asynchronous terminal emulation	Chapter 8

Installing and Configuring the Software

This chapter provides general information about installing the software and explains the tasks the Setup program performs. The following topics are covered:

● Installing the software

● What the Setup program does

● Setting up 122-key keyboards

● Do you need to configure the software?

Installing the software

To install the software, all you need to do is run the Setup program. Use the diskettes included in your software package. Once you start the Setup program, it automatically prompts you to enter the required information.

Installation checklist

Before you begin the installation, do the following:

- Install the required hardware and software, as explained in Chapter 1, "Introducing IRMA WorkStation for Windows."

- Determine the connection type(s) to install. You can install a stand-alone connection (CUT, DFT, SDLC, 802.2, or TN3270) or a gateway connection (IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA). See Chapter 1, "Introducing IRMA WorkStation for Windows," for a description of your connectivity options.

- Decide what applications to install. See Chapter 1, "Introducing IRMA WorkStation for Windows," for a description of the applications.

- Obtain the host system parameters and other information required to configure your connections and 3270 display and printer emulation sessions. See your system administrator for details.

- Determine what language (character set), keyboard, and printer support are required.

- Determine the target drive and directory for the IRMA WorkStation for Windows files.

- Determine whether you will use HLLAPI, APPC, or Common Service Verbs. HLLAPI is supported by all connection types; however, APPC and Common Service Verbs are supported in CUT, DFT, SDLC, or 802.2 connections only.

- Review the README file for any last-minute changes or instructions.

You should also complete the following if you plan to run IRMA WorkStation for Windows from a file server:

- Install IRMA WorkStation for Windows on the file server.

- Set up write protection for the IRMA WorkStation for Windows files on the server.

- Provide access to the file server from the user's PC.

You're now ready to run the Setup program, as described in the following section.

Running the Setup program

The Setup program prompts you for information such as the type of connection you are using to communicate with the host and whether you are installing IRMA WorkStation for Windows on your PC or on a network file server. To run the Setup program, follow these steps:

1   Insert the diskette labeled IRMA WorkStation for Windows Disk 1 in any available disk drive on your PC.

2   Start Windows.

3   Choose Run from the Windows Program Manager File pull-down.

4   In the Command Line edit box, enter the diskette drive and the program name as follows:

    drive:\setup

    The Language Selection dialog box is displayed.

5   Specify the language (character set) you want to use and choose OK. The Setup dialog box is displayed and then the software starts reading and loading the Setup program. Next, the IRMA WorkStation for Windows introductory screens are displayed.

    Note: Before continuing with the installation process, choose the Read This pushbutton to display the Read This First window. This window contains last-minute instructions or changes to the software. ■

6   Follow the instructions on the screen to install IRMA Workstation on your PC or on a file server.

7   Reboot your PC after the software is installed.

If, at a later time, you need to change your connection type or modify other configuration information, simply run the Setup program again. To do this, double-click on the Setup icon from the IRMA WorkStation group window.

What the Setup program does

During the installation process, the Setup program performs the following tasks:

- Copies files from the installation diskettes to the specified drive and directory

- Builds the IRMA WorkStation for Windows group window

- Automatically updates the appropriate system files—WIN.INI, AUTOEXEC.BAT, and SYSTEM.INI. (You can make the changes to the system files manually if you want. If your AUTOEXEC.BAT file is not on the C: drive, you must make the changes to it manually.)

- Installs the fonts used by IRMA WorkStation for Windows

- Allows you to specify a private directory to a subdirectory in which you can store the configuration file (and application profiles) separately from the installed software. This is useful if you have multiple users who require different configurations. Each user must have write privileges to access the subdirectory.

- If you installed the software from a file server, Setup copies the necessary files from the server to the PC (or to a private directory on the server if the PC does not have a disk).

  The PRIVATE.DEF file, which is installed on the server, contains a list of the files that are copied to the private directory. These files include keyboard profiles and configuration files. You can delete any unused keyboard profiles from the private directory and copy additional files to the directory, if required. For example, if you add the names of your own emulator or file transfer profiles to the PRIVATE.DEF file, Setup copies these files to the user's private directory. If you set up QuickExec profiles or SISL scripts, you can copy them to this file also. If you add files to the list in PRIVATE.DEF, be sure to keep the format consistent. To speed up installations to private directories, you can remove any unnecessary .KBD files from PRIVATE.DEF.

Setting up 122-key keyboards

IRMA WorkStation for Windows supports the following keyboards:

- IRMAkey/3270

- Memorex-Telex 122-key

- IBM 122-key

- Key Tronic

A Windows keyboard driver is provided for each keyboard so that it can be used for 3270 emulation and other Windows applications.

To install one of the drivers, you need to modify the [BOOT] section of the SYSTEM.INI file. This section already contains a statement for the key name KEYBOARD.DRV. Substitute the name of the driver you want to install in this statement. For example, to install the IRMAkey/3270 driver, modify the statement as follows:

```
KEYBOARD.DRV=IRMAKEY.DRV
```

If you intend to use the Memorex-Telex, Key Tronic, or the IBM 122-Key keyboard, modify the statement to one of the following:

```
KEYBOARD.DRV=MTKEY.DRV          (Memorex-Telex)
KEYBOARD.DRV=KTKEY.DRV          (Key Tronic)
KEYBOARD.DRV=122KEY.DRV         (IBM 122-key)
```

On the IRMAkey/3270, IBM 122-key, Key Tronic, and the Memorex-Telex keyboards, the [Print] key copies screen or window data to the clipboard. To set up the keyboard driver to enable this key as the 3270 local copy key, modify the [KEYBOARD] section in the SYSTEM.INI file as follows:

```
[KEYBOARD]
SUBTYPE=1
TYPE=4
```

The SUBTYPE field is used to configure the DCA Windows keyboard drivers: the TYPE field is used to indicate whether the keyboard is enhanced.

To enable the [Print] key to copy screen or window data to the clipboard, modify the [KEYBOARD] section as follows:

```
[KEYBOARD]
SUBTYPE=0
TYPE=4
```

With this configuration, the Keyboard Editor can map the local copy function to an unused key, and the copy-screen-or-window feature is preserved.

If you have configured Windows for a country other than the U.S., you can use the SUBTYPE field to enable the [Reset] key that is to the right of the space bar as an [AltGr] key. The default for this key is 3270-Reset. To set the key up as the [AltGr] key, modify the [KEYBOARD] section as follows:

```
[KEYBOARD]
SUBTYPE=2
TYPE=4
```

To enable the [Print] key to copy screen or window data to the clipboard and also enable the [Reset] key to act as an [AltGr] key, modify the [KEYBOARD] section as follows:

```
[KEYBOARD]
SUBTYPE=3
TYPE=4
```

Newer model Memorex-Telex keyboards have DIP switches that you use to set up the keyboard for different keyboard layouts. IRMA WorkStation for Windows supports the 122-Enhanced layout, which corresponds to switch 12 being on.

Do you need to configure the software?

Whether or not you need to configure the software depends on what connection type(s) you specified during installation. IRMA WorkStation for Windows provides default configurations for each connection type. Depending on the type(s) you selected, you may need to configure some communications parameters. Table 2-1 provides a summary of the requirements.

Table 2-1.   Configuration requirements

Connection	Should you configure the software?
CUT	No, unless you need to change the defaults
DFT	No, unless you need to change the defaults
Token ring	Yes
SDLC	Yes
IRMALAN NETBIOS	Yes
IRMALAN IPX/SPX	No, unless you want to specify a particular IRMALAN/*EP* gateway

continued

Table 2-1. Configuration requirements (cont.)

Connection	Should you configure the software?
NetWare for SAA	No, unless you want to change the defaults
TN3270	Yes
APPC	Yes

Default CUT and DFT configurations

The configuration files delivered with the software contain complete configurations for the CUT and DFT environments. There are four CUT and DFT configuration files—DCACUT.CFG, DCADFT.CFG, IBMCUT.CFG, and IBMDFT.CFG.

The CUT and DFT configurations are defined as follows:

● One CUT connection and one Model 2 display session using session short name A

● One DFT connection and four Model 2 display sessions using session short names A–D

You do not have to modify the default CUT or DFT configuration unless you intend to do one or more of the following:

● Set up a second coaxial adapter in your PC

● Change the host keyboard type from Typewriter to Text or to Typewriter/Num-Lock style

● Change your PC keyboard from the 101-key layout to an 84-key, 122-key, or 3191-style layout

● Change the host language from the default (English US) provided with the software

● Enable IRMA 3 to emulate an IBM adapter

● Enable the IRMA 3 x'220' base address for applications written for the PROM-based IRMA adapter

● Configure a host printer session

● Change the 3270 session type from a Model 2 display

● Change the 3270 session short name A for a CUT connection or change the short names A–D for DFT connections

If any of these conditions is true, you must configure your connection and session(s). Otherwise, you can begin 3270 emulation immediately after installing the software and rebooting the PC.

If you are using a token-ring, SDLC, IRMALAN NETBIOS, or TN3270 connection, or plan to use APPC, you must configure a connection. You will need to specify host-related parameters or a gateway name (if you are using an IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA connection). If you are using APPC, you will need to specify the mode, LU, and TP security parameters.

To learn about configuring connections and 3270 sessions, turn to Chapter 3, "Configuring for 3270 Emulation."

Configuring for 3270 Emulation

After you have installed the software, you can configure your connections and 3270 sessions, if required. IRMA WorkStation for Windows provides complete configurations for CUT and DFT connections. Refer to Chapter 2, "Installing and Configuring the Software," to determine if you need to change the default settings.

If you are going to use a token-ring, SDLC, TN3270, or IRMALAN NETBIOS, connection, or plan to implement APPC transaction programs, you must configure the software. This chapter explains how to proceed. The following topics are covered:

- Introducing the 3270 Configurator
- Starting the 3270 Configurator
- Configuring connections
- Configuring 3270 sessions
- Configuring RTM settings
- Configuring NetView user alerts
- Choosing a host character set
- Selecting a keyboard
- Configuring the log file
- Choosing a network management connection
- Managing configuration files
- Exiting the 3270 Configurator

This chapter provides brief steps for performing tasks. For a more complete description of dialog boxes and their options, use on-line help.

Introducing the 3270 Configurator

The 3270 Terminal application allows your PC to use an SNA or TCP/IP network to communicate with an IBM host computer. To use the 3270 emulation features, you may need to configure connections, based on your adapter type, 3270 sessions, and APPC. You may also want to choose a host character set, select a keyboard, configure your log file, and establish a network management connection to the host. You can use the 3270 Configurator application to accomplish these tasks and to manage your configuration files. The following sections explain the procedures.

Starting the 3270 Configurator

To start configuring the software, choose the 3270 Configurator icon from the group window. The 3270 Configurator main dialog box, shown in Figure 3-1, is displayed. The configuration file for your primary connection is initially opened. If you want to configure a different connection, you must open the configuration file for that connection.
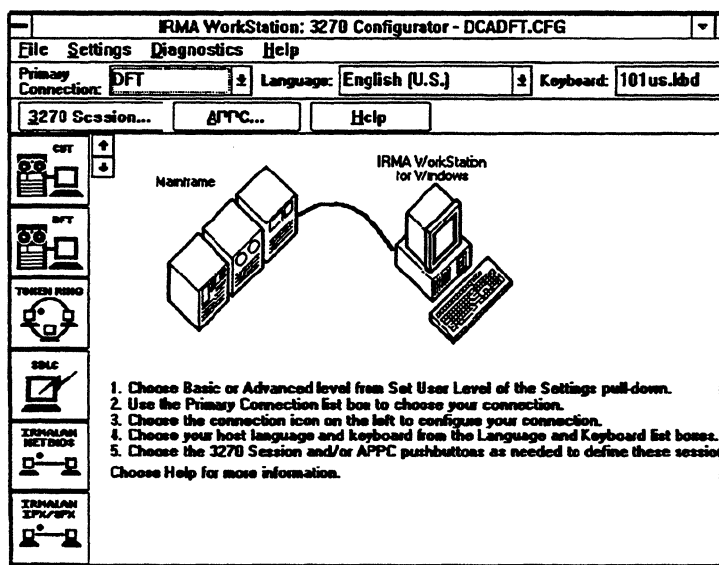
Figure 3-1. 3270 Configurator main dialog box

Table 3-1 describes the items in this dialog box.

Table 3-1. 3270 Configurator main dialog box items

Item	Description
File	Lets you create, open and save a 3270 configuration file and exit the 3270 Configurator.
Settings	Lets you select and run a configuration file from a list of files and directories. Your selection becomes the running configuration file. This pull-down also allows you to set your user level as Basic or Advanced. The user level you choose determines the complexity of parameters you must configure.
Diagnostics	Lets you define how log data is recorded and choose a network management connection. This feature is not supported if you are using a CUT, TN3270, IRMALAN NETBIOS, or IRMALAN IPX/SPX connection.
Help	Provides on-line help. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."
Primary Connection	Lets you specify the current connection to be used to communicate with a host or peer computer.
Language	Lets you choose the host character set.
Keyboard	Lets you specify your PC's keyboard type: 84-key, 101-key, 122-key, 3191-style, or APL, or a customized version of one of these.
3270 Session	Lets you configure your 3270 host sessions.
APPC	Lets you configure your APPC sessions. This option is not available for CUT, TN3270, IRMALAN NETBIOS, IRMALAN IPX/SPX, and NetWare for SAA connections.
Help	Lets you view on-line help for the 3270 Configurator main dialog box.

Table 3-1.   3270 Configurator main dialog box items (cont.)

Item	Description
Connection icons	The icons along the left side of the 3270 Configurator main dialog box let you configure your connection type(s)—CUT, DFT, token ring, SDLC, IRMALAN NETBIOS, IRMALAN IPX/SPX, NetWare for SAA, and TN3270. Note that the connection types that appear depend on the type of connections you specified when you installed the software.

Configuring connections

You start configuring connections from the 3270 Configurator main dialog box, shown in Figure 3-1. You can perform the following tasks:

● Configure a new connection

● Change an existing connection

● Delete a connection (SDLC or token ring only)

The following paragraphs explain each procedure. If you have questions while configuring your connections, refer to the appropriate considerations for your connection type following this section.

Configuring a new connection

To configure a new connection, follow these steps:

1   From the File pull-down, choose either New to start a new configuration or Open to open an existing configuration. Note that the running configuration file is the default.

2   Choose Set User Level from the Settings pull-down to define your user level as Basic or Advanced.

Basic provides default settings that should be adequate for most systems when only using 3270 communications. Advanced allows you to define more specialized communications settings. You must choose Advanced when using APPC.

3   Choose the appropriate icon at the left side of the main dialog box (CUT, DFT, Token Ring, SDLC, IRMALAN NETBIOS, IRMALAN IPX/SPX, NetWare for SAA, or TN3270) to specify the connection required for your environment. A dialog box for your connection type is displayed.

Note: If you see the ⬆ and ⬇ arrows displayed next to the connection icons, this means not all of the icons are currently displayed. To see the other connection icons, click on either the ⬆ or ⬇ arrow. ∎

4 Complete the dialog box. Special considerations for each connection type are explained later in this chapter.

5 Choose OK.

6 Choose the Primary Connection list box to specify the connection to use when communicating with remote computers.

Changing an existing connection

To change an existing connection, follow these steps:

1 Choose Set User Level from the Settings pull-down to define your user level as Basic or Advanced.

2 Choose the appropriate connection icon at the left side of the main dialog box to specify the connection to change. A dialog box for your connection type is displayed.

3 Make the necessary changes and then choose OK.

Deleting a connection

You can delete all but one token-ring or SDLC connection. To delete a token-ring or SDLC connection, follow these steps:

1 Choose Set User Level from the Settings pull-down and then choose Advanced.

2 Choose the appropriate connection icon at the left side of the main dialog box. A dialog box for your connection type is displayed.

3 Choose the connection you want to delete from the dialog box.

4 Choose Delete and then choose OK.

5 Choose OK.

Note: You cannot delete CUT, DFT, IRMALAN NETBIOS, IRMALAN IPX/SPX, NetWare for SAA, or TN3270 connections. ∎

CUT and DFT considerations

Consider the following when configuring CUT or DFT Basic or Advanced parameters in the CUT Connection or the DFT Connection dialog box:

● The IRMA 3 Adapter Address is used for downloading and initializing the adapter. If you specify Autoscan, the software automatically scans the

adapter to determine the correct address. Use this option to route the software to a specific address. The address must match the DIP switch or ADF settings on the adapter.

- The Board Address is used for I/O to the mainframe. If you specify Auto-scan, the software automatically scans the adapter to determine the correct address. Use this option to route the software to a specific address. The address must match the DIP switch or ADF settings on the adapter.

- Choose Enable 220h Address to enable the IRMA 3 adapter to be compatible with the original PROM-based IRMA adapter. You must enable the X'220' address range to use any DCA or third-party software written for the PROM-based IRMA hardware. Disabling this setting frees the address range for use by other adapters and software.

- Choose IBM support to run an IRMA 3 adapter in IBM mode or to use IBM adapters.

Token-ring considerations

Keep the following considerations in mind when configuring token-ring parameters in the Token Ring Connection dialog box:

- The Block ID to Send and PUID to Send parameters (Basic level) are not required when communicating to a 3174 token-ring gateway.

- The Destination Address parameter (Basic and Advanced levels) should be set in one of the following ways:

  - When the workstation is communicating with a host, the Destination Address value must match the value specified in the MACADDR= parameter in VTAM.

  - When the workstation is communicating with another PC running IRMA WorkStation for Windows or other DCA software, this address is provided in the remote computer's CONFIG.SYS file. This file includes a line to load the token-ring driver in the following format:

    ```
    Device=DXMC0MOD.SYS addr0 mem0 addr1 mem1
    ```

    The variable addr0 is the network address of the primary adapter and addr1 is the network address of the secondary adapter. The variables mem0 and mem1 are token-ring memory addresses.

- For the Node ID to Send parameter (Advanced level), the reserved values X'000' and X'FFF' cannot be used for Block Number, and the reserved value X'00000' cannot be used for Node Number. The same is true for the Block ID (which is equivalent to Block Number) and PU ID (which is equivalent to Node Number) for the Basic level.

- The Node ID to Receive parameter (Advanced level) is required only when the remote end is defined as Peer Node. The reserved values X'000' and X'FFF' cannot be used for Block Number, and the reserved value X'00000'

cannot be used for Node Number. Note that Peer Node is only available with APPC (LU 6.2) connections.

Token-ring framing parameters

When configuring token-ring framing parameters in the second Token Ring Connection dialog box (Advanced level), consider the following:

- If you specify a value of 0 (zero) for the Retry Limit parameter, the system transmits frames only once, whether or not there is a response.

- For the Receive Acknowledge Threshold parameter, enter the maximum number of frames the local computer can receive from the remote computer before sending a response.

- For the Unacknowledged Send Limit parameter, enter the maximum number of frames to send without receiving a response from the remote computer. The recommended value is 1. Use a value of 2 only if there is constant two-way traffic between IRMA WorkStation for Windows and the remote computer.

Token-ring APPC parameters

When configuring token-ring APPC parameters in the Token Ring APPC Parameters dialog box (Advanced level), consider the following:

- If you are going to use this connection to communicate with a host computer, specify Host System as the remote end. If you intend to communicate with a computer that is not a host, specify Peer Node.

- The Link Role parameter is grayed unless you choose Peer Node; it is required for peer connections.

- You must choose Accept Incoming Calls when using this connection for APPC, and when communicating with remote computers that can initiate sessions with IRMA WorkStation for Windows.

- The Control Point Name parameter is optional if you are using the Node ID to Receive parameter. If you are connecting to a host, this name must match the PU name in the host's PU macro.

IRMALAN NETBIOS considerations

When configuring IRMALAN NETBIOS parameters in the NETBIOS Connection dialog box, keep the following considerations in mind about the Advanced level choices:

- You can enter up to four gateway names to be used in the search for a connection. Gateway names have up to 8 alphanumeric characters. The first character must be alphabetic.

- Setting the Gateway Search Count parameter to 0 (zero) causes the software to search for a gateway until a connection is established. If you want to limit the number of connection attempts in order to reduce network traffic, set this parameter to a value other than zero.

- Setting the Gateway Search Delay parameter to 0 (zero) causes the software to continue searching, without delay, for a gateway until a connection is established. If the gateways in the search list are out of LU resources or LAN sessions, setting this parameter to a value greater than zero reduces network traffic while the workstation waits for the time specified before attempting a connection again. The workstation connects when resources become available at a gateway.

- For the Establish Gateway Connection parameter, specify Autoconnect if you want the software to attempt a gateway connection immediately at start-up; specify Manual if you want to initiate the gateway connection using the on-line toggle [Ctrl][PgUp].

- Workstation Command Line Options are the options you want to automatically execute when starting IRMA WorkStation for Windows. Possible options include the following:

-d	Starts the software in diagnostics mode. It provides additional information about why a gateway connection may fail.
-m	Registers the emulator name with NETBIOS as a group name. The default is a unique name.
-p	Specifies that the exact sessions in your configuration file must be available at the gateway to which you connect. If you use this option, you will not be able to connect to any of your sessions unless you can connect to all of them.
	If you do not use the -p option, the software connects to the first gateway that can provide even one valid session.
-x	Disables expedited flow when pacing is configured at the host. Pacing takes place on the normal flow.

  Use the following format for the command-line options:

-o -o -o -o	The symbol o represents an option. A hyphen is required before each option. Enter a space to separate one option from the next. You can specify options in any order.

- The LU Reservation /Security Option parameters specify the requirements to connect to an IRMALAN NETBIOS gateway. Possible choices include the following:

None	Specifies that no security (user IDs and passwords or symbolic workstation name) is required for connecting to the gateway. Use this option to access pooled LUs or to access LUs reserved by adapter ID at the gateway.
User ID/ Password	Requires that user IDs and passwords be entered when connecting to the gateway. The software prompts you for a user ID and password before making the gateway connection. User IDs and passwords are case-sensitive.
Symbolic Workstation Name	Reserves LUs without requiring user IDs and passwords. If you make this selection, enter a name for IRMA WorkStation for Windows in the edit box. The name consists of a maximum of 8 alphanumeric characters (0–9, A–Z, a–z) and is case-sensitive.

Note: Regardless of the choice you make, if the IRMALAN gateway requires a user ID and password to access the gateway, the software prompts for a user ID and password after initial contact with the gateway. ■

● The Network Adapter parameter must match the jumper or switch setting on your LAN interface adapter. If you are using only one LAN interface adapter, you are probably using the primary address on the adapter.

● The Transmit Timeout and Receive Timeout parameters specify the number of seconds IRMA WorkStation for Windows waits to receive acknowledgment of a data transfer before it times out.

● The Transmit NCBs Allowed and Receive NCBs Allowed parameters specify the number of outstanding transmit or receive Network Control Blocks IRMA WorkStation for Windows allows. Unless your LAN administrator recommends a specific value, use the default, 2, for both options.

IRMALAN IPX/SPX considerations

When configuring IRMALAN IPX/SPX parameters in the IRMALAN IPX/SPX Connection dialog box, keep the following considerations in mind about the Advanced level choices:

● The Gateway Search Mode parameter indicates whether the workstation searches for a gateway by name or by network address. Choosing Name allows the software to use specialized IPX broadcasts to locate gateways by name or by wild card (*). If you choose Name, you must enter the Gateway Names:

Gateway Names	This is an 8-character alphanumeric name for the gateway you intend to use. The first character must be alphabetic.
	Enter up to four gateway names to be used in the seach for a connection. These names are tried in order until a connection is established.
	Enter an asterisk (*) to direct the software to search for any available gateway. If you enter an asterisk, it must be the last entry in your list.

If your network does not support IPX broadcast packets, you should choose Network Address and then enter the Network Numbers and the Network Addresses:

Network Numbers	These are 8-digit, hexadecimal numbers. Use leading zeros to right justify network numbers with fewer than 8 digits.
Network Addresses	These are the 12-digit, hexadecimal node addresses of up to 4 gateways. Use leading zeros to right justify node addresses with fewer than 12 digits.

- Setting the Gateway Search Count parameter to 0 (zero) causes the software to search for a gateway until a connection is established. If you want to limit the number of connection attempts in order to reduce network traffic, set this parameter to a value other than zero.

- Setting the Gateway Search Delay parameter to 0 (zero) causes the software to continue searching, without delay, for a gateway until a connection is established. If the gateways in the search list are out of LU resources or LAN sessions, setting this parameter to a value greater than zero reduces network traffic while the software waits for the time specified before attempting a connection again. The workstation connects when resources become available at a gateway.

- Choosing the Search Local Network First parameter causes IRMA WorkStation for Windows to wait 2 seconds for responses from the gateways on the local network before it searches the rest of the Novell internetwork. If no gateway with this name is available on the internetwork, the process is repeated with the next name on the list you provided for the Gateway Names parameter.

- Choose the Enhanced Gateway Search parameter if you want the workstation to wait for 2 seconds to allow all eligible gateways to respond. This can help distribute client PCs among eligible gateways instead of having them all attempt to connect to the first gateway to respond.

  Note: Enhanced Gateway Search is useful only if you are using the gateway name-sharing or wild-card search feature extensively. ■

- For the Establish Gateway Connection parameter, specify Autoconnect if you want the software to attempt a gateway connection immediately at start-up; specify Manual if you want to initiate the gateway connection using the on-line toggle Ctrl PgUp.

- The LU Reservation/Security Option parameters specify the requirements to connect to an IRMALAN IPX/SPX gateway. Possible choices include the following:

  None
  : Specifies that no security (user IDs and passwords or symbolic workstation name) is required for connecting to the gateway. Use this option to access pooled LUs or to access LUs reserved by adapter ID at the gateway.

  User ID/ Password
  : Requires that user IDs and passwords be entered when connecting to the gateway. The software prompts you for a user ID and password before making the gateway connection. User IDs and passwords are case-sensitive.

  Symbolic Workstation Name
  : Reserves LUs without requiring user IDs and passwords. If you make this selection, enter a name for IRMA WorkStation for Windows in the edit box. The name consists of a maximum of 8 alphanumeric characters (0–9, A–Z, a–z) and is case-sensitive.

  Note: Regardless of the choice you make, if the IRMALAN IPX/SPX gateway requires a user ID and password to access the gateway, the software prompts for a user ID and password after initial contact with the gateway. ∎

- The Transmit ECBs Allowed parameter specifies how many transmit Event Control Blocks (referred to as ECBs) the client can issue at a time. Unless your LAN administrator recommends a specific value, use the default value of 3.

- The Receive ECBs Allowed parameter specifies how many receives are queued waiting for incoming packets. Unless your LAN administrator recommends a specific value, use the default value of 7.

- The Maximum IPX Listens parameters determines how many buffers are available for receiving packets while the workstation is attempting to establish a gateway connection. Unless your LAN administrator recommends a specific value, use the default value of 6.

- Workstation Command Line Options are the options you want to automatically execute when starting IRMA WorkStation for Windows. Possible options include the following:

  -d
  : Starts the software in diagnostics mode. It provides additional information about why a gateway connection may fail.

-p	Specifies that the exact sessions in your configuration file must be available at the gateway to which you connect. If you use this option, you will not be able to connect to any of your sessions unless you can connect to all of them.
	If you do not use the -p option, the software connects to the first gateway that can provide even one valid session.
-x	Disables expedited flow when pacing is configured at the host. Pacing takes place on the normal flow.

Use the following format for the command-line options:

-o -o -o -o	The symbol o represents an option. A hyphen is required before each option. Enter a space to separate one option from the next. You can specify options in any order.

NetWare for SAA considerations

When configuring NetWare for SAA parameters in the NetWare for SAA Connection dialog box, keep the following considerations in mind:

- The Maximum Receive ECBs parameter specifies the maximum number of receive buffers that are queued waiting for incoming packets. Unless your LAN administrator recommends a specific value, use the default value of 6.

- The Retry Count parameter specifies the number of times your workstation should try to establish a host connection. If you want to limit the number of connection attempts in order to reduce network traffic, set this parameter to a value less than the default setting of 10.

TN3270 considerations

When configuring TN3270 parameters in the TN3270 Connection dialog box, keep the following considerations in mind:

- The TCP/IP Stack parameter specifies which TCP/IP protocol stack to use for the connection. Possible choices are Novell LAN WorkPlace, FTP Software PC/TCP, Wollongong Pathway Access, and Microsoft LANMAN/3Com.

- The Options parameters are the options you want to automatically execute when starting IRMA WorkStation for Windows. Possible options include the following:

-d	Starts the software in diagnostics mode. It provides additional information about why a host connection may fail.
-d3	Starts the software in diagnostics mode and enables the display of a diagnostics message before the server disconnects. This is useful when you are connecting to a host using an OSC II server from Open Connect Systems.

-d3 (cont.)	Normally, the screen is cleared when a disconnection occurs. If you use this option, the screen is not cleared and an error message is displayed before the OCS II server disconnects.
-m*nnnn*	Specifies the size of the send buffer. The maximum buffer size if 2048, which is the default. The *nnnn* value represents the number of bytes to attempt to send in each packet.

- Setting the Connection Timeout parameter to 10 causes the software to wait up to 10 seconds for a host connection. If no host connection is made within that period, the process is repeated until a connection is established.

SDLC considerations

Consider the following when configuring SDLC parameters in the SDLC Connection dialog box. Unless otherwise noted, the considerations are for the Advanced level:

- If you are connecting to a host, your choice for the Encoding parameter (NRZ or NRZI) must match the value specified in the LINE/GROUP macro in VTAM. This applies to both the Basic and the Advanced level.

- For the Node ID to Send parameter, the reserved values X'000' and X'FFF' cannot be used for Block Number, and X'00000' cannot be used for Node Number. Additionally, note the following in setting this parameter:

  - If this connection uses a leased SDLC line to connect to a host, the host can accept any Node ID to Send value; the default values are adequate in this case.

  - If this connection uses a switched SDLC line to connect to a host, your Block Number and Node Number values must match the IDBLK and IDNUM parameters respectively in the VTAM definition.

- The Poll Address specifies IRMA WorkStation for Windows polling address. Coordinate this value with the host or the remote computer administrator. When connecting to a host, this address must match the ADDR= parameter in the PU macro of the host's VTAM definition.

- The XID Type parameter is valid only for host connections. Verify with your host administrator that the host can accept format 3 XIDs. Format 3 XIDs can cause problems for some versions of the host Network Control Program (NCP). If the host software cannot accept them or if you cannot determine the XID type used by the host, specify format 0 (zero). Host connections configured for format 0 XIDs cannot be used by independent APPC LUs.

SDLC APPC parameters

Keep the following in mind when configuring APPC parameters in the SDLC APPC Parameters dialog box (Advanced level):

● If you are going to use this connection to communicate with a host computer, specify Host System as the remote end. If you intend to communicate with a computer that is not a host, specify Peer Node.

● The Link Role parameter is grayed unless you choose Peer Node; it is required for peer connections.

● You must choose Accept Incoming Calls when using this connection for communications with remote computers that can initiate sessions with IRMA WorkStation for Windows.

● If you are connecting to a host, the Control Point Name must match the PU name in the host's PU macro.

SDLC multi-point connections

The software supports the use of multi-point connections for APPC when using an SDLC leased line. You can configure up to four multi-point connections, with IRMA WorkStation for Windows designated as the primary computer on each connection.

To configure multi-point connections, you must do the following:

● Configure the Remote End parameter as Peer Node and the Link Role parameter as Primary in the SDLC APPC Parameters dialog box for each connection.

● Configure each of the connections to use a leased line.

● Configure all parameters in the SDLC Connection dialog box identically for each connection except Poll Address, which must be unique for each computer.

In addition, the Node ID to Send and Node ID to Receive parameters may be different for each remote computer. Contact the remote system administrator(s) to determine the Poll Address, the Node ID to Send, and the Node ID to Receive.

APPC considerations

APPC stands for Advanced Program-to-Program Communication, which is an API that allows peer-to-peer communications among programs on an SNA network. An API is a facility that provides information and services to application programs. APPC support is not available if you are configuring a CUT, IRMALAN NETBIOS, IRMALAN IPX/SPX, TN3270, or NetWare for SAA connection.

Through APPC, application programs distributed across a network can work together—communicating with each other and exchanging data—to accomplish a single processing task. Processing tasks that are accomplished by programs

using APPC are called transactions. Consequently, programs that use APPC are called transaction programs, or TPs.

When one TP invokes another TP, some of the parameters it specifies are as follows:

● Local LU alias

● Partner TP name

● Partner LU alias

● Mode

● Security information (the TP specifies whether to use conversation-level security and, if so, provides a user ID–password combination)

For the two programs to communicate, you must configure the supporting LUs, the mode, the invocable TP, the user IDs, and if needed, the passwords.

Configuration requirements

Configuration requirements vary depending on whether both TPs are on the IRMA WorkStation for Windows computer or one TP is on the IRMA Work-Station for Windows computer and its partner is on a separate SNA computer.

Both TPs on the IRMA WorkStation for Windows computer

In order for a pair of TPs residing on the IRMA WorkStation for Windows computer to communicate with each other, you must configure the following:

● Two usable APPC LUs.

● A mode selected as local.

● You associate one local LU with another local LU and then associate the LU pair with a mode.

● The invocable TP. (An invocable TP is a program that is configured to be invoked through the APPC API.)

● A user ID–password combination if you are going to use conversation-level security.

TPs on different computers

In order for a pair of TPs residing on different SNA computers (one of which is IRMA WorkStation for Windows) to communicate with each other, you must configure the following items for the local IRMA WorkStation for Windows computer:

- A connection.

- A local APPC LU.

- A remote APPC LU for the partner TP.

- A mode specifying the connection, class of service, and session parameters required for communication to take place.

  You associate the local LU with the remote LU and then associate a mode with the LU pair.

- The invocable TP, if it is to reside on the IRMA WorkStation for Windows computer.

- A user ID-password combination, if the invocable TP is to reside on the IRMA WorkStation for Windows computer and conversation-level security is to be used.

In addition, the remote computer must be configured with corresponding parameters.

Practical considerations

From a practical standpoint, you should be aware of the following:

- The TPs may need to have access to multiple possible LU pairs; therefore, you may want to configure many LU pairs.

- One LU can serve multiple TPs.

- One LU may need to be paired with different partner LUs.

- Each LU pair may need multiple possible modes.

Implicit modes

IRMA WorkStation for Windows supports the use of implicit modes for APPC operation. This means that a session can be established between two LUs without specifying explicit mode names in the configuration.

If you configure an implicit mode for a pair of LUs, the invoking TP on the remote computer can specify any mode name. If the TP specifies a mode name that has not been configured for the local LU, the LU accepts the unknown mode name and uses the networking characteristics of the implicit mode.

To configure a mode as an implicit mode, use an asterisk (*) as the first character of the mode name. A pair of LUs can have only one implicit mode configured, but can also have multiple named modes configured.

You can change a normal mode to an implicit mode or the other way around by changing the mode name except in the following instances:

- You cannot change a normal mode to an implicit mode if the change would cause a pair of LUs to have more than one implicit mode.

- You cannot change an implicit mode to a normal mode if a local LU is using the implicit mode with an implicit partner LU. (See the next section, "Implicit Partner LUs," for more information on configuring implicit partner LUs.)

Implicit partner LUs

IRMA WorkStation for Windows supports the use of implicit partner LUs. This means that a session can be established between two LUs when the partner LU alias is not configured for the LU pair. DCA APPC allows the invoking and invoked TPs to reside on the same network computer, if desired.

Implicit partner LU support provides added flexibility in configuring for APPC. For example, by pairing an implicit remote LU with a local LU, you can allow any remote LU to establish a session with the local LU. You can configure only one mode for use with an implicit partner LU—this mode must be an implicit mode.

Dependent and independent LU support

A local computer supports a total of 254 LUs when communicating with a host through APPC.

When communicating with a host running a VTAM system older than version 3, release 2, IRMA WorkStation for Windows supports the use of dependent LUs only. Dependent LUs are configured with a value of 1 or greater in the LOCADDR= parameter in the NCP Gen, and allow a maximum of 1 session per configured LU for a total of 254 sessions per local computer.

When communicating with a host running a VTAM version 3, release 2, or newer, with either NCP version 5, release 2, or newer (3720 and 3745 systems), or NCP version 4, release 3, or newer (3725 systems), the software supports the use of independent LUs. Independent LUs are configured with a value of 0 (zero) in the LOCADDR= parameter in the NCP Gen, and can support multiple and parallel sessions per configured LU. When using independent LUs, the software allows a maximum of 254 sessions per LU. When using independent LUs, the software allows a total of 508 sessions per local computer (based on a maximum of 254 independent- and 254 dependent-based sessions) are supported.

To determine the VTAM version of the host system with which you are communicating, contact the host system administrator.

Supporting parallel sessions

For a pair of APPC LUs to support parallel sessions, a mode named SNASVCMG is required. This mode is used to negotiate session limits and should not be used for communications between TPs.

This extra mode is automatically configured by the system as defined in Table 3-2. It is required even if parallel-session LUs use a single-session mode.

Table 3-2. SNASVCMG default configuration

Parameter	Setting
Priority	high
Maximum active sessions	2
Minimum contention winner	1
Partner minimum contention winner	1
Auto-activation limit	0
Minimum Send RU Length	256
Maximum Send RU Length	256
Send Pacing Count	4

The default SNASVCMG mode is not shown as an option.

If you want to use different values for the definition of this mode, you can override the defaults by configuring a mode with the name SNASVCMG and specifying values other than those shown in Table 3-2. (The Minimum Contention Winner and the Partner Minimum Contention Winner for SNASVCMG should always be set to 1.) When you define the LU pair, you must associate the special SNASVCMG mode as well as a standard mode with the LU pair.

TP security

If an invocable TP is configured to use conversation-level security, the invoking TP must supply a user ID and password.

If you configure an invocable TP that resides on the IRMA WorkStation for Windows computer to use conversation-level security, the user ID-password combination supplied by the invoking TP must match a user ID-password combination you have configured.

If you configure an invocable TP that resides on the IRMA WorkStation for Windows computer to use prevalidated security, the user ID passed by the invoking TP must match a user ID you have configured.

User IDs and passwords are not tied to specific TPs. If a partner TP attempts to invoke a local TP that requires conversation-level security, the invoking TP can provide any user ID and password that has been configured to be used with TP security.

Configuring 3270 sessions

Before you can use the 3270 emulation software, you need to set up your 3270 sessions. IRMA WorkStation for Windows supports up to 10 display or printer sessions. However, you can have only five concurrent sessions.

Note: CUT and TN3270 connections do not support printer sessions. ∎

Prerequisites

Make sure you have completed the following tasks before you configure a 3270 session:

● Configured one or more connections for the IRMA WorkStation for Windows PC

● Determined the display or printer host LU number for an SDLC or token-ring session

Configuring a session

To configure a 3270 session, choose 3270 Session from the 3270 Configurator main dialog box. The 3270 Sessions dialog box is displayed. From this dialog box, you can do the following:

● Add a 3270 session using default values

● Modify an existing 3270 session

● Delete a 3270 session

The following paragraphs explain each task. If you have questions while configuring a session, refer to the 3270 session considerations that are covered later in this chapter.

Adding a session

To add a 3270 session, follow these steps:

1   Choose New from the list box on the 3270 Sessions dialog box.

2   Choose Add. The Configure 3270 Sessions dialog box is displayed.

3   Complete the dialog box as needed for your session.

4   Choose OK.

Modifying a session

You can modify a 3270 session that has already been configured. Follow these steps to modify an existing 3270 emulation session:

1   Choose the session you want to modify from the list box on the 3270 Sessions dialog box.

2   Choose Change. The Configure 3270 Sessions dialog box is displayed, showing the existing configuration for the 3270 session.

3   Complete the dialog box as needed for your session.

4   Choose OK.

Deleting a session

You can also delete an existing 3270 session. Follow these steps:

1   From the list box on the 3270 Sessions dialog box, choose the session you want to delete.

2   Choose Delete.

Enabling the keyboard type-ahead feature

Keyboard type ahead allows you to type up to 30 characters in advance and store them in a buffer. This is useful when a Do Not Enter status-line message appears; you can continue typing until the buffer is full. (For information on status-line messages, see Appendix A, "Status Line Messages.")

To enable the type-ahead feature, check the Type Ahead check box on the 3270 Sessions dialog box. Checking this box enables type ahead for all of your 3270 sessions.

Choosing CECP support

If the host computer is using a country extended code page (referred to as CECP) character set, check the Host Translation Using CECP Character Set check box. Checking this box enables CECP for all of your 3270 sessions.

You must choose CECP support before choosing a host character set. See "Choosing a Host Character Set" later in this chapter for more information.

3270 session considerations

Keep the following in mind when setting configuration parameters in the Configure 3270 Sessions dialog box. Unless otherwise noted, the considerations apply to the Advanced level:

● The LU number (Basic and Advanced levels) is assigned in the following ways:

– For CUT, the LU number is grayed. For DFT, the LUs are numbered 1 to 5 in the order they are configured on the control unit.

– For an SDLC or token-ring session, the number must match the LU number configured on the host for the desired LU type—display or printer.

– For an IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA connection (Advanced level), this item is grayed.

- The Session ID is an alphabetic character (A-Z) that identifies the session.

- The Session Name is required. It is up to 8 alphanumeric or special characters (#, @, or $). The Session Name identifies the session. This name is used to sort the session list, which is displayed for various purposes, such as activating a session.

- The Type indicates the type of device your PC is emulating. Your choices are printer or display. Note that printer emulation is not supported in TN3270 environments.

- The Maximum Structured Field Size is the size of the transmit buffer containing structured data fields. The default is 8 KB. You can improve the performance of your file transfers by increasing this value to 32 KB. However, we do not recommend that you increase this value without first contacting your system administrator.

- If you specify Printer as the device type, the LU must be configured as a printer on the host (if using a DFT, SDLC, or 802.2 connection). If you're using an IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA connection, an LU must be configured as a printer on the gateway and on the host computer. (Printer emulation is not supported in CUT and TN3270 connections.)

- Available model types include Models 2, 3, 4, and 5. If, however, you are configuring an IRMALAN NETBIOS or IRMALAN IPX/SPX connection, the option Any is also available. Use the Any option only when the host LUs are configured for an unspecified model size. Contact your host administrator for information about how your host LUs are configured.

- If you are using a NetWare for SAA connection, the SAA Advanced Options pushbutton appears at the bottom of the Configure 3270 Sessions dialog box. Choose this pushbutton to display the Configure 3270 Sessions for SAA-Advanced Options dialog box. Use this dialog box to specify the communications server name, service name, your username, and LU category. For more information about this dialog box, refer to the on-line help.

Configuring RTM settings

The Response Time Monitor saves statistics regarding the time it takes the host to respond during 3270 display sessions. This data is sent to the host on the same connection as the active 3270 session for which the data is being collected. This allows you to view this information in the form of a histogram.

Note: Host response-time monitoring is not supported in CUT, TN3270, NetWare for SAA, IRMALAN NETBIOS, or IRMALAN IPX/SPX environments. ■

Follow these steps to configure RTM settings:

1   Choose RTM from the 3270 Sessions dialog box. The 3270 RTM Settings dialog box is displayed.

2   Complete your configuration as needed to specify how you want to view your response time data.

3   Choose either Save or Save As from the File pull-down to save your RTM configuration.

Configuring NetView user alerts

You can configure up to 20 NetView user alerts. When configuring alerts, you must work with your host administrator to determine the meaning of each alert number. (NetView operators recognize alerts by number, since NetView alerts are sent in 3174 format which allows only numbers between 1 and 20.)

Note: NetView user alerts cannot be configured in CUT, TN3270, NetWare for SAA, IRMALAN NETBIOS, or IRMALAN IPX/SPX environments. ■

Follow these steps to configure NetView user alerts:

1   Choose User Alerts from the 3270 Sessions dialog box. The Configure 3270 Alert Description dialog box is displayed. Existing alerts are specified by name and any unspecified alerts are designated as unused.

2   To configure a new alert or modify an existing one, double-click on the alert. The Configure Description for Alert #*nn* dialog box is displayed.

3   Complete your alert configuration as needed to specify the alert description and parameters that you want to send to the NetView operator.

4   Choose either Save or Save as from the File pull-down to save your user alert configuration.

Choosing a host character set

IRMA WorkStation for Windows supports various host character sets. To choose the character set used by your host computer, follow these steps:

1   If the host computer configuration allows you to use a host code page based on the CECP character set, do the following before specifying a host character set:

- Choose 3270 Session from the 3270 Configurator main dialog box. The 3270 Sessions dialog box is displayed.

- Check the Host Translation Using CECP Character Set check box, if it is not already checked. You must choose CECP support before choosing a host character set; otherwise, the language selection is canceled.

- Choose OK.

2   Choose a language from the Language list box on the 3270 Configurator main dialog box.

3   Complete your configuration as needed for other options such as connection type and APPC parameters.

4   Choose either Save or Save As from the File pull-down to save your configuration.

Selecting a keyboard

IRMA WorkStation for Windows supports a variety of keyboards. To specify the type of keyboard you want to use, follow these steps:

1   Choose a keyboard from the Keyboard list box on the 3270 Configurator main dialog box.

2   Complete your configuration as needed for other options such as connection type, 3270 sessions, and APPC.

3   Choose either Save or Save As from the File pull-down to save your configuration.

Note: If you have set up your workstation for a private path, only the keyboard profiles that exist in your private path can be selected. ■

International keyboards

If you are an international user, your keyboard profile name has the following format:

XXYNNN.KBD

The following paragraphs explain the format:

XX	This is the country code; for example, UK.
Y	This is the CECP indicator. There are two possible values:
	C CECP character set
	N Non-CECP character set
NNN	This is the number of keys on the keyboard; for example, 102.
.KBD	This is the file name extension.

Keyboard profiles based on a CECP character set usually have more characters mapped on the keyboard than those based on non-CECP character sets. You can use the Keyboard Editor's Key List Editor feature to map any CECP characters you want on your keyboard profile. For non-CECP character sets, only the existing characters on the non-CECP keyboard profile are valid. For more information about the Key List Editor, see Chapter 7, "Using the Keyboard Editor."

Configuring the log file

If you do not want to use the default log file parameters provided with the software, you can define such parameters as the file name, the file size, and the logging level.

Note: This option is not applicable in TN3270, IRMALAN NETBIOS, or IRMALAN IPX/SPX environments. ■

To configure the default log file parameters, complete the following steps:

1   Choose Log from the Diagnostics pull-down on the 3270 Configurator main dialog box. The Log dialog box is displayed.

2   Specify the log file name, the file size, and the logging level.

3   Choose OK to confirm your selections.

The information you specify in the Log dialog box is saved in SYSTEM.INI rather than in the configuration file. You must set up trace file parameters directly in the SYSTEM.INI file. See Appendix D, "SYSTEM.INI Parameters," for additional information. See Chapter 11, "Using Diagnostics," for information on using the log and trace files.

Choosing a network management connection

If you intend to run applications that transfer network management data to a NetView console at the host or to send link-level alerts to the host, you must establish a network management connection.

Note: The network management connection is not applicable in TN3270, IRMALAN NETBIOS, or IRMALAN IPX/SPX environments. ■

To establish the network management connection, complete the following steps:

1   Choose Diagnostic Connection from the Diagnostics pull-down on the 3270 Configurator main dialog box. The Network Diagnostic Connection dialog box is displayed.

2   Specify the connection to use when transmitting network management data or link-level alerts to the host.

3   Choose OK to confirm your selections.

Managing configuration files

Your 3270 configuration parameters are stored in a configuration file. You can create multiple configuration files; you specify the running, or current, configuration file by choosing Select Running Config File from the Settings pull-down.

A configuration file contains the following types of setup information:

- Connection information defining the path from the IRMA WorkStation for Windows PC to each remote host computer or peer computer.

- The active connection used to communicate with the host or peer computer.

- The character set of the host computer and the type of keyboard attached to your PC.

- 3270 session information defining characteristics of 3270 emulation used to communicate with the host computer.

- APPC information including local LUs, modes, remote LUs, invocable TPs, and conversation security. APPC security information is stored in a security file that has an .SEC extension. This file is created when you configure for TP security.

  Note: APPC is not supported in TN3270, IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA environments. ■

Using multiple configuration files

If you have created multiple configuration files, you may need to switch files to use a different connection. When you switch to a new configuration file, you must set it up as the running configuration file. To switch from one configuration file to another, perform these steps:

1 Exit all IRMA WorkStation for Windows applications and choose the 3270 Configurator icon from the group window.

2 Choose Select Running Config File from the Settings pull-down. The Select Running Config File dialog box is displayed.

3 From the Files list box, highlight the file you want to choose.

  You can choose a configuration file by typing the file name and path in the File Name edit box. If you need to change directories, highlight the directory where the file resides in the Directories list box and double-click on your choice.

4 Choose Select to set the file as the running configuration file. This configuration is used the next time you start an IRMA WorkStation for Windows application.

5 Choose Exit from the File pull-down to return to the group window.

Setting up configuration files

You use the options on the File pull-down to create, modify, and save configuration files. Each task is explained in the following paragraphs.

Note: If you do not specify an extension when opening and saving your configuration files, .CFG is used. Any other extension is invalid. ■

Creating a new configuration file

To create a new configuration file, follow these steps:

1 Choose New from the File pull-down. The 3270 Configurator starts a new configuration file, based on the primary connection type you specified during installation. You can begin to configure your parameters.

2 Choose the Primary Connection, Connection icons, Language, Keyboard, 3270 Session, APPC, and Diagnostics items in this order as needed for your environment.

3 Choose Save As from the File pull-down to save the configuration. You must choose Select Running Config File from the Settings pull-down to use the new configuration the next time you start an IRMA WorkStation for Windows application.

Changing an existing configuration file

You can make changes to an existing configuration file. Follow these steps to open an existing configuration file:

1 Choose Open from the File pull-down. The Open dialog box is displayed.

2 From the Files list box, highlight the file you want to choose, or you can type the file name and path in the File Name edit box.

3 Choose Open.

4 Make configuration changes as needed for your environment.

Saving a new configuration

After creating a new configuration file, save the file using the following steps:

1 Choose Save As from the File pull-down. The Save As dialog box is displayed.

2   Specify the path and name of the new configuration file you want to save. If you do not specify an extension, .CFG is used. Any other extension is invalid.

3   Choose Save.

Saving configuration changes to an existing file

After changing an existing configuration, you can save your changes in the currently open configuration file by selecting Save from the File pull-down.

Saving a modified configuration under a new name

You can also save a modified file under a new name. Follow these steps:

1   Choose Save As from the File pull-down. The Save As dialog box is displayed.

2   Specify the path and name of the configuration file you want to save. If you do not specify an extension, .CFG is used. Any other extension is invalid.

3   Choose OK.

Exiting the 3270 Configurator

To leave the 3270 Configurator, choose Exit from the File pull-down. If you have made changes to the current configuration that have not been saved, you are prompted to save them before exiting the application.

Conducting 3270
Display Emulation

When you have installed and configured the software as required for your com-
munications environment, you are ready to begin 3270 emulation. IRMA Work-
Station for Windows supports 3270 display and printer emulation as well as file
transfers between your PC and a host computer. Note that printer emulation is
not supported in TN3270 environments.

This chapter describes how to use the features and functions of 3270 display
emulation. It covers the following topics:

- Introducing the 3270 Terminal Application

- Starting 3270 display emulation

- Activating and deactivating display sessions

- Connecting to an IRMALAN gateway

- Connecting to a NetWare for SAA gateway

- Customizing your display

- Viewing host response times

- Sending NetView user alerts

- Understanding 3270 data fields

- Running HLLAPI programs

- Exiting 3270 display emulation

To learn about 3270 printer emulation and
file transfers, see Chapter 5, "Conducting
3270 Printer Emulation," and Chapter 6,
"Transferring Files."

This chapter provides brief steps for per-
forming tasks. For a more complete
description of dialog boxes and their
options, use on-line help.
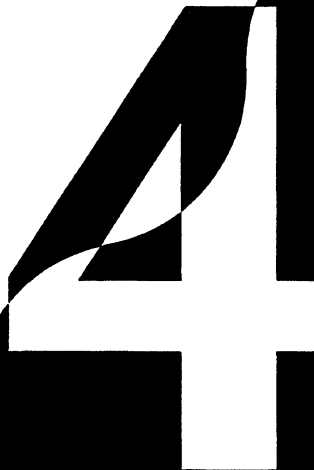
Introducing the 3270 Terminal application

The 3270 display emulation software gives you access to most of the standard features of an IBM 3270 terminal by providing for communications between a mainframe host and a PC. Table 4-1 provides a description of the 3270 display emulation features.

Table 4-1.   3270 display emulation features

Feature	Description
Multiple sessions	You can initiate up to 5 sessions depending on your configuration.
Model 2–5 display	You can emulate full-screen or scrolled displays of the following types: Model 2 (24 lines x 80 columns), Model 3 (32 lines x 80 columns), Model 4 (43 lines x 80 columns), and Model 5 (27 lines x 132 columns).
Multiple document interface	You can view multiple display session windows concurrently, in either a cascaded or tiled format. You can reduce a window to an icon and close all windows simultaneously. Note that you can also start a separate copy of 3270 Terminal for each display session if you do not want to use the MDI feature.
Screen customization	You can customize fonts, output devices, files, colors, representation of 3270 functions on the PC, and audible signals. You can save the settings in multiple profiles.
Screen capture	You can capture emulation screens to a disk or printer. If captured to a disk, the screen data can be appended to a file or may overwrite a file. If you want to capture multiple screens and automatically save them as separate files, you can use DOS wild cards to name them; you specify the name and wild-card extension and the software automatically captures and saves the files.
QuickBar	The QuickBar provides shortcuts to frequently used features and dialog boxes. The QuickBar displays icons that initiate tasks, such as file transfers and screen captures. You can start these tasks quickly by clicking on the icons.

continued

Table 4-1.   3270 display emulation features   (cont.)

Feature	Description
QuickHit	You can use the mouse to perform actions associated with the program function keys right on the host session display. All you have to do is point the mouse and click on the function key as it is displayed on your host application screen. Refer to your mainframe application documentation for specific information on your existing program function keys.
QuickScript	You can record and save a series of keystrokes to perform a task, or create scripts using SISL. You can also link Windows applications using DDE. For more information, refer to the *DCA Script User's Guide*.
QuickPad	You can access any key on the keyboard through an on-screen keypad. Simply point the mouse and click to select a key using the default 16-key keypad or create your own using the Keyboard Editor.
QuickSAA	You can use your mouse to help navigate through your host application's SAA-style menus. All you have to do is point the mouse and click on the menu item you want as it is displayed on your host application screen. The menu item(s) you select are automatically entered in the data entry field(s) for you.
HLLAPI	You can write programs using HLLAPI to simulate the actions of a 3270 user by entering and handling host data. Refer to the *DCA HLLAPI Programmer's Guide*, provided in the optional DCA HLLAPI Software Developer's Tool Kit, for more information.
Light pen emulation	You can use a mouse to emulate a light pen during a host display session. Light pen emulation lets you select and enter data directly from a formatted host screen without using the keyboard. If the host screen supports a light pen, point the mouse and press the right mouse button to select items from a list or table displayed on the screen.
	Note: You can configure a different mouse button for light pen emulation from the 3270 Terminal application. ■

Table 4-1. 3270 display emulation features (cont.)

Feature	Description
APA graphics	You can access mainframe graphics applications, such as SAS/GRAPH® and CA-TELLAGRAF®, and move images directly to your PC for copying, storing, and printing. IRMA Graphics for Windows must be installed in order to have access to APA graphics. You can paste graphics into Windows applications like CorelDRAW!®, Micrografx® Charisma™, and PC Paintbrush™ from ZSoft®. For more information about your APA graphics support, refer to the *IRMA Graphics for Windows User's Guide* provided with the IRMA Graphics for Windows software.
PS graphics	You can access mainframe graphics applications and move images directly to your PC for copying, storing, and printing. IRMA Graphics for Windows must be installed in order to have access to Programmed Symbol (PS) graphics. For more information about your PS graphics support, refer to the *IRMA Graphics for Windows User's Guide* provided with the IRMA Graphics for Windows software.
Response Time Monitor*	IRMA WorkStation for Windows provides a performance response time monitor, called RTM, that displays and stores information about the time it takes for the host to respond during 3270 display sessions. You can view a statistical histogram at your PC.
NetView user alerts*	IRMA WorkStation for Windows interacts with NetView through data link alerts. The NetView monitoring system gathers data for administrative tasks such as operations management, problem determination, and performance management. With user alerts, you can send preformatted messages to the NetView operator. For example, you can request that the operator mount a tape for disk backup or change printer forms for printing on a certain paper stock.

* This feature is not supported in CUT, TN3270, IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA environments.

Table 4-1.   3270 display emulation features   (cont.)

Feature	Description
Multiple gateway search	If you are using an IRMALAN NETBIOS or IRMA-LAN IPX/SPX connection, you can use the multiple gateway search feature that allows IRMA WorkStation for Windows to search for a connection from a list of available gateways. This provides you with more chances to establish a connection.
Hot backup	If you are using an IRMALAN NETBIOS or IRMA-LAN IPX/SPX connection, you can take advantage of the hot backup feature. This feature automatically searches for another gateway when an existing gateway connection is somehow disconnected. You also can use the connection control key sequence Ctrl End to force the software to search for another gateway.
Gateway connection control keys	If you are using an IRMALAN NETBIOS or IRMA-LAN IPX/SPX connection, you can use special key sequences to control the gateway connection process. These include the following: ● On-line Toggle—takes a gateway connection off line, or restarts an off-line connection. The key sequence is Ctrl PgUp. ● Next Gateway—disconnects from the current gateway and restarts the gateway search procedure with the next configured gateway. If the current gateway is last in the list, the search starts at the top of the list. The gateway list is specified during configuration. The key sequence is Ctrl End. ● Power-On Reset—resets the emulator without exiting the program. This resets the LAN session with the current gateway. All active host sessions are terminated and then immediately restarted. The key sequence is Ctrl PgDn.

Starting 3270 display emulation

To start 3270 display emulation, choose the 3270 Terminal icon from the group window. The 3270 Terminal action bar is displayed, as shown in Figure 4-1.
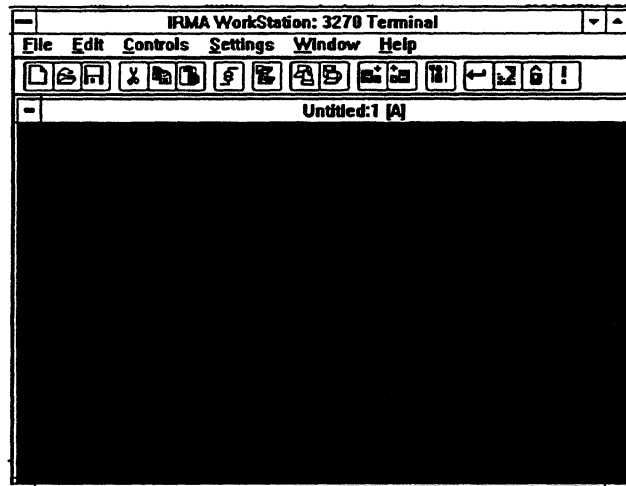
Figure 4-1. 3270 Terminal emulator window

The 3270 Terminal emulator window includes an action bar, a QuickBar, and a status line. The following paragraphs explain these items.

The action bar

Use the action bar pull-downs, shown in Figure 4-1, to create and change a 3270 Terminal emulation profile, edit and copy screen data to the clipboard, modify your terminal emulation settings, and activate and deactivate a terminal session. You can also use the action bar pull-downs to open, close, and re-arrange your windows, and access on-line help. Table 4-2 describes the action bar pull-downs.

Table 4-2. 3270 Terminal pull-downs

Pull-down	Explanation
File	Lets you create and change 3270 Terminal emulation profiles, capture host screens to a printer or disk file, and initiate file transfers between your PC and the host.
Edit	Provides options to change the contents of a host screen and to copy screen data to the clipboard. You can also specify how the data should be formatted as it is copied to the clipboard.
Controls	Lets you activate and deactivate a terminal session, and access QuickScript, QuickPad, and QuickHit.
Settings	Provides options to establish parameters that determine the way your PC performs during 3270 terminal emulation. You can customize display colors, control audible signals, configure mouse buttons, select fonts, and select sessions.
Graphics	This option appears only if IRMA Graphics for Windows is installed. Refer to your *IRMA Graphics for Windows User's Guide* for more information.
Window	Lets you select, arrange, and close display emulation windows.
Help	Provides on-line assistance. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."

Hiding the action bar from view

If you want to hide the action bar in order to maximize your terminal screen, follow these steps:

1   Choose Options from the File pull-down.

2   Choose Hide Menu Bar. The check mark that appears next to the Hide Menu Bar option indicates that the option is selected.

Redisplaying a hidden action bar
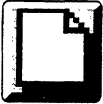
If you have the action bar hidden from view and you want to redisplay it, click on the system menu icon and choose Show Menu Bar. The action bar is displayed on your screen.

The QuickBar

The QuickBar displays icons that initiate tasks, such as transferring files and connecting and disconnecting terminal sessions. You can start these tasks quickly by clicking on the appropriate icons. To see a description of an icon, simply point to the icon; a brief description of the icon appears in the title bar.
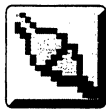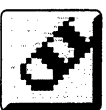
Table 4-3 describes the QuickBar icons displayed when you use the 3270 Terminal application.

Table 4-3.   QuickBar icons in a 3270 Terminal window

Icon	Function
	Displays an untitled emulator window for you to create a new profile.
	Displays the Open dialog box. Use this dialog box to open an existing profile.
	Saves your changes to the currently displayed profile. If this is a new profile, the Save As dialog box is displayed.
	Deletes the selected text from the current host screen and puts it in the clipboard.
	Copies the selected text from the current host screen to the clipboard.
	Pastes the text from the clipboard to the screen, beginning at the current host cursor position.
	Establishes a connection with the host. This icon is displayed when no connection is active. The QuickBar displays either this icon or the following icon, depending on the status of the connection.

continued

Table 4-3. QuickBar icons in a 3270 Terminal window (cont.)

Icon	Function
	Disconnects the session with the host. This icon is displayed when the connection is active. The QuickBar displays either this icon or the preceding icon, depending on the status of the connection.
	Displays the File Transfer dialog box. Use this dialog box to initiate a file transfer.
	Prints the current host screen to the printer. Make sure you have defined your printer using the Print Setup option from the File pull-down.
	Prints the current host screen to a file on disk. Make sure you have defined the disk file using the Print Setup option from the File pull-down.
	Resizes the session window to the next smaller size.
	Resizes the session window to the next larger size. This option has no effect if the session window is maximized.
	Displays the Utilities dialog box. Use this dialog box to run other IRMA WorkStation for Windows applications without leaving the 3270 Terminal application.
	Sends an Enter key to the host.
	Sends a Clear key to the host.

Table 4-3.   QuickBar icons in a 3270 Terminal window (cont.)

Icon	Function
	Sends a Reset key to the host.
	Sends an Attention key to the host. Note that this key is not supported in TN3270 environments.

Hiding the QuickBar from view

If you want to hide the QuickBar in order to maximize your screen display, follow these steps:

1   Choose Options from the File pull-down.

2   Choose QuickBar. The QuickBar icons are removed from your screen.

Note: The check mark disappears, indicating that the option is no longer selected. ■

Redisplaying a hidden QuickBar

If you have the QuickBar hidden from view and you want to redisplay it, follow these steps:

1   Choose Options from the File pull-down.

2   Choose QuickBar. The QuickBar is redisplayed on your screen.

Note: The check mark that appears next to the QuickBar option indicates that the option is selected. ■

The 3270 status line

During a 3270 display session, the bottom line of your display shows the status line. This operator information area presents messages about the current session. For a complete description of the status line and messages, see Appendix A, "Status Line Messages."

Activating and deactivating display sessions

The 3270 display emulation software allows your PC to emulate a terminal attached to a mainframe computer. You can use pull-down options to start a new, or undefined, session, or you can start a defined session automatically. When defining a new session, you can even specify the name of a start-up script to perform host- and DDE-related functions once the session is activated. For example, you can use a start-up script to automatically enter your logon sequence. The following sections explain how to start new and previously defined sessions.

Note: If you do not want to use the configuration defaults provided with IRMA WorkStation for Windows, you need to configure the software before you start a 3270 display session. If necessary, refer to the instructions in Chapter 3, "Configuring for 3270 Emulation," before proceeding with the following instructions. ■

Activating a new session

You can activate a new session in either of the following ways:

● Define the session and start it immediately

● Define the session and start it at a later time

Each process is explained in the sections that follow. Before you begin, make sure you know your host system logon procedure. Check with your system administrator.

Note: Keep the following considerations in mind when you define a session:

● If you define the session to start immediately, you can save your start-up settings in a profile. Then you can use the profile to start the session automatically the next time. The next section, "Starting a Session Immediately," explains how to save the settings.

● If you are using an IRMALAN NETBIOS or IRMALAN IPX/SPX connection, some mainframes allow multiple screen model types to be used on the same LU. In this case, you can specify a model type other than the one you established during configuration. The first session you activate adjusts automatically to whatever model type you specify. However, if you activate a subsequent session that is configured for a specific model type, but you choose a different model type from the dialog box, the initial host screen will be distorted because the host assumes you are using the model type specified during configuration. Press Clear to clear the screen; then log on as usual.

● If you are using a TN3270 connection, the OFFLINE message can appear in the status line even though the session is active. This means the host connection could not be established. To correct the problem, press the Online/Offline toggle key, `Ctrl` `PgUp`, to attempt the connection. ■

Starting a session immediately

To define a 3270 display session and start it immediately, complete the following steps:

1 Choose New from the File pull-down. A session window is displayed.

2 Choose Terminal Sessions from the Settings pull-down. The Terminal Sessions dialog box is displayed. (You can also choose Activate from the Controls pull-down to display the Terminal Sessions dialog box.)

3 Check the Enable APA Graphics check box if you want to copy, print, or store APA graphics from mainframe applications or paste graphics in Windows applications. IRMA Graphics for Windows must be installed for access to APA graphics.

4 Specify the session and the display model type.

5 Make sure the Auto Activate Session check box is checked.

6 To specify a start-up script, enter the script name in the Startup Script edit box.

7 Choose OK to start the session.

8 To save your settings in a profile, choose Save As from the File pull-down. If you intend to customize your display, wait to save the start-up settings until after you have defined all of the emulation parameters for the session.

9 If you did not specify a start-up script to automate the session logon, enter your logon sequence when the 3270 logon screen is displayed.

Starting a session at a later time

To define a 3270 display session now and then start it at a later time, complete the following steps:

1 Choose New from the File pull-down. A session window is displayed.

2 Choose Terminal Sessions from the Settings pull-down. The Terminal Sessions dialog box is displayed.

3 Check the Enable APA Graphics check box if you want to copy, print, or store APA graphics from mainframe applications or paste graphics in Windows applications. IRMA Graphics for Windows must be installed for access to APA graphics.

4 Specify the session and the display model type.

5 If the Auto Activate Session check box is checked, undo the check.

6 To specify a start-up script, enter the script name in the Startup Script edit box.

7 Choose OK to leave the dialog box.

8 When you are ready to start the session, choose Activate from the Controls pull-down.

9 If you did not specify a start-up script to automate the session logon, enter your logon sequence when the 3270 logon screen is displayed.

For more information on using scripts, refer to Chapter 10, "Recording Scripts with QuickScript," and the *DCA Script User's Guide*.

Activating a defined session automatically

Once you have defined a session for automatic activation and have saved the settings in a profile, you can start the session automatically from the 3270 Terminal action bar or from the Windows Run command line. The following sections explain how to proceed. Before you begin, make sure you know your host system logon procedure. Check with your system administrator.

From the 3270 Terminal action bar

To start a session automatically from the 3270 Terminal action bar, complete the following steps:

1 Choose Open from the File pull-down. The Open dialog box is displayed.

2 Specify the name of the profile that contains the session parameters.

3 Choose OK to start the session.

4 Log on to the host if the profile you are using does not include a start-up script that performs the logon for you.

From the Windows Run command line

To start a session from the Windows Run command line, complete the following steps:

1   Choose Run from the Windows Program Manager File pull-down.

2   In the Command Line edit box, type the following path. Make sure you include a space after the first EMU:

*x:\directory***EMU** *profilename.***EMU**

Note that the extension .EMU following *profilename* is optional.

3   Log on to the host if the profile you are using does not include a start-up script that performs the logon for you.

Note: You can list multiple profiles on the EMU command line. Each profile starts another emulation session. You can also include this command in a QuickExec profile; then you can start the display session (with the settings saved in *profilename*.EMU) automatically by choosing the QuickExec icon associated with the profile. ■

Deactivating a session

When you activate a session, the Activate option from the Controls pull-down changes to Deactivate. (Note that the Connect icon on the QuickBar changes to Disconnect.) Choose Deactivate to stop the session. You also deactivate sessions when you exit 3270 Terminal.

Connecting to an IRMALAN gateway

Once you activate the first 3270 display session, the connection process to the IRMALAN NETBIOS or IRMALAN IPX/SPX gateway begins.

You specify the gateway name or network number and adapter address (IRMALAN IPX/SPX connections only) when configuring IRMA WorkStation for Windows. For IRMALAN NETBIOS connections, if multiple gateways are set up to share the same group name, IRMA WorkStation for Windows chooses the first gateway to respond. IRMALAN IPX/SPX connections allow an asterisk (*) to be used as the gateway name, in which case IRMA WorkStation for Windows connects to any gateway that is properly configured. See Chapter 3, "Configuring for 3270 Emulation," for a description of gateway connection options.

The status of your gateway connection appears in the status line of the opening screen. The exact appearance of your screen depends on the type of connection being established between the IRMALAN gateway and the host and on the application being accessed on the host. If the gateway is configured to require user IDs and passwords, a dialog box appears for you to enter your user ID and password. See the following section, "Entering a User ID and Password," for instructions in completing this dialog box.

A series of -+z_9xx messages is displayed as IRMA WorkStation for Windows connects to the gateway—these messages disappear when the gateway connection is complete. If you continue to receive -+z_9xx messages, the gateway connection attempts failed. Restart IRMA WorkStation for Windows to run diagnostics by using the -d command line option in the configuration (see Chapter 3, "Configuring for 3270 Emulation," for details.) A gateway connection failure can occur for several reasons—you may have specified a gateway that has restricted access, all LUs or available LAN sessions on the gateway may be in use, or the gateway may not be active.

The gateway name is displayed at the right end of the status line (in positions 61 to 68), once the gateway connection is established.

The LU number is also displayed at the right end of the status line, in positions 69 and 70. If the LU is 0 (zero), the gateway cannot assign an LU for this session. When a ready symbol of 4, 6, or S appears at the far left of the status line, the gateway is acting as or is connected to a 31xx, 32xx, or 37xx control unit. If the host is functioning, a host logon screen should appear momentarily.

Once the gateway connection is established, you can view the status of all configured sessions by clicking on the IRMALAN icon on the desktop and choosing About.

Entering a user ID and password

If you have configured the gateway connection to require a user ID and password, the IRMALAN UserID/Password dialog box is displayed.

Follow these steps to complete this dialog box:

1   Enter your user ID in the Enter UserID edit box.

2   Enter your password in the Enter Password edit box. For security purposes, your entry is not displayed as you enter it.

3   Choose OK to continue the gateway-connection process. You can also choose ⌈Cancel⌋ from the dialog box to go off line. If you choose to go off line, you can use the key sequences explained in Table 4-1 earlier in this chapter to continue the gateway-connection process.

Connecting to a NetWare for SAA gateway

Once you activate the first 3270 display session, the connection process to the NetWare for SAA gateway begins.

You specify the server name, service name, user name, and LU category when configuring IRMA WorkStation for Windows. You can use an asterisk (*) as the server name, in which case IRMA WorkStation for Windows connects to the first available communications server. If you enter a question mark (?) as the server name or if there is a problem connecting to the communications server you specified during configuration, a list of available servers is displayed once you activate the session. You are prompted to choose a server from this list and enter your user name and password. See Chapter 3, "Configuring for 3270 Emulation," for a description of gateway connection options.

If you try to activate a session and the software is unable to attach to the server, the NetWare for SAA Communications Server Attachment dialog box is displayed. This dialog box also appears if you use a question mark (?) as the server name during configuration. Use this dialog box to specify the server to which you want to connect. You can also change the user name and password, if necessary. For more information about the NetWare for SAA Communications Server Attachment dialog box, refer to the on-line help.

Customizing your display

You can customize emulation parameters or change settings such as the screen attribute colors for different sessions. To set up your 3270 display, use the Settings pull-down to access the dialog boxes you use to define fonts and screen colors. The dialog boxes work in a similar fashion. They display the default settings if you are creating a new profile or the current settings if you are modifying an existing profile. You can change the settings as you need.

Defining fonts

To define fonts, follow these steps:

1   Choose Fonts from the Settings pull-down. The Fonts dialog box is displayed.

2   Specify the Typeface.

3   Specify the font size as follows:

   ● If you want the font automatically sized, make sure Automatic Font Sizing is checked.

   ● If you want to specify a font size, make sure Automatic Font Sizing is not checked, and then choose the appropriate font size.

4   If you want your display session windows automatically sized, check Automatic Window Sizing.

5   Choose OK to confirm your selections.

Defining screen colors

To define screen colors, follow these steps:

1   Choose Screen Colors from the Settings pull-down. The Screen Colors dialog box is displayed.

2   Specify the Color Mode and Screen Elements. You can also enable the EAB feature provided with IRMA WorkStation for Windows. (EAB characters are discussed in the section "Understanding 3270 Data Fields" later in this chapter.)

3   Choose OK to confirm your selections.

Viewing host response times

IRMA WorkStation for Windows provides a performance monitor called RTM that displays and stores information about how long it takes for the host to respond during 3270 display sessions. If IRMA WorkStation for Windows is configured to support RTM, you can view a statistical histogram at your PC.

Note: Host response time tracking is not supported for TN3270, IRMALAN NETBIOS, IRMALAN IPX/SPX, NetWare for SAA, or CUT connections. ■
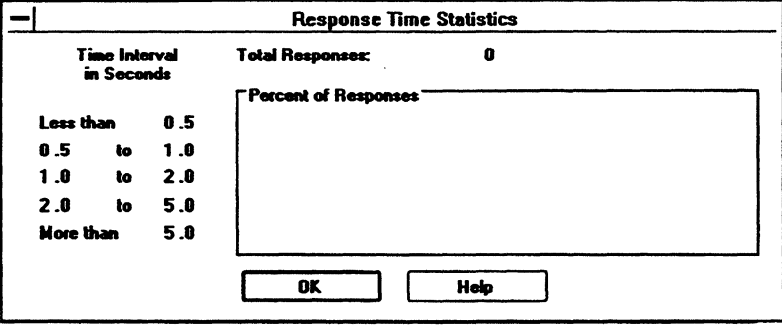
Response-time data collection begins at the start of each communications session. When it ends depends on how you configure the IRMA WorkStation for Windows RTM feature. The following are possible termination points:

● When the host screen reaches your display screen

● When the host unlocks your keyboard

● When the host lets you send data

Note: Before you can view RTM statistics, you must activate the session for which you want to see response times. See "Activating and Deactivating Display Sessions" earlier in this chapter for instructions on activating a session. ■

To view the response time statistics for the current session, follow these steps:

1   Choose Response Times from the Controls pull-down. The Response Time Statistics dialog box, shown in Figure 4-2, is displayed.

```
┌──┬──────────────────────────────────────────────────────┐
│──│                  Response Time Statistics              │
├──┴──────────────────────────────────────────────────────┤
│      Time Interval      Total Responses:         0        │
│       in Seconds                                          │
│                      ┌─Percent of Responses──────────────┐│
│    Less than    0.5  │                                    ││
│    0.5    to    1.0  │                                    ││
│    1.0    to    2.0  │                                    ││
│    2.0    to    5.0  │                                    ││
│    More than    5.0  │                                    ││
│                      └────────────────────────────────────┘│
│                         ┌──────────┐  ┌──────────┐        │
│                         │    OK    │  │   Help   │        │
│                         └──────────┘  └──────────┘        │
└──────────────────────────────────────────────────────────┘
```

Figure 4-2.   Response Time Statistics dialog box

2   Review the statistics for the current session.

3   When you are finished, choose OK to exit the dialog box.

Sending NetView user alerts

The NetView monitoring system gathers data for administrative tasks such as operations management, problem determination, and performance management. You can send preformatted messages, or user alerts, to the NetView operator.

Note: NetView user alerts are not supported in CUT, TN3270, IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA environments. ■

Before you can send a user alert, you must activate a session and log on to the host. Also, be sure you have a valid SSCP session and the correct connection.

To send NetView alerts to operators on the SNA network, follow these steps:

1   Choose User Alerts from the Controls pull-down. The Send Alert dialog box is displayed.

2   Specify the alert type and the message text.

3   Choose Send to send the message.

Understanding 3270 data fields

Not all of the data fields on a 3270 terminal work in the same way. Some fields are protected, which means you cannot enter data, and some fields allow only numerical input. There are also some fields that are not displayed.

Attribute and EAB characters determine the format of the 3270 data fields. You can find out how your 3270 terminal screen is formatted by displaying the attributes. The following sections explain the function of attribute and EAB characters and provide guidelines for viewing the attributes and protected fields.

Attribute characters

The attribute character determines how the information you enter is displayed or whether the information is displayed at all. On formatted 3270 displays, an invisible attribute character at the beginning of each field determines whether you can enter data in that field. If you can enter data, it defines the type of data you can enter in that field.

Viewing attributes

You can view attributes by choosing Emulator and then Show Attributes from the Settings pull-down.

Viewing protected fields

Some display fields are protected. You can view these fields by choosing Emulator and then Show Protected from the Settings pull-down. Periods appear in unprotected fields in which no data is entered.

EAB characters

The EAB feature, used by some host applications, expands the graphics capabilities of your monitor to include reverse video, blinking characters, underlining, and seven-color character display (on color monitors).

You can use Screen Colors from the Settings pull-down to turn the EAB feature on and off.

Note: If you are using a DFT, SDLC, or token-ring connection and you have configured multiple sessions, you can specify whether a particular session uses EAB characters. However, if you are using a CUT, TN3270, IRMALAN NETBIOS, IRMALAN IPX/SPX, or NetWare for SAA connection and you have configured multiple sessions, all of the sessions use EAB characters. ■

Running HLLAPI programs

During 3270 emulation, you can run programs that use the HLLAPI provided by IRMA WorkStation for Windows. Some of these programs let you simulate the actions of a 3270 user by entering and handling data received from the host. For example, you can use a HLLAPI program to log on to a 3270 host automatically.

Before you run a HLLAPI program, make sure you know the required session ID. Check with the HLLAPI program vendor. Then follow these steps:

1   Start the 3270 Terminal application.

2   Start a 3270 display session. Do not log on to the host if the HLLAPI program performs this function automatically.

3   Check the status line to make sure that the session short name of the active 3270 session matches the session ID used by the API.

4   Move to the Windows Program Manager, File Manager, or Windows Run command line and start the program.

Note: HLLAPI programs can be purchased from other vendors or may be written by your company. Programs developed using the DCA HLLAPI Software Developer's Tool Kit are compatible with IRMA WorkStation for Windows; however, DOS HLLAPI applications are not compatible. ■

For details on writing HLLAPI programs, see the *DCA HLLAPI Programmer's Guide*, available in the optional DCA HLLAPI Software Developer's Tool Kit.

Exiting 3270 display emulation

To exit the 3270 Terminal application, choose Exit from the File pull-down. You are prompted to save any unsaved changes before exiting the application. If you do not want to be prompted to save changes before exiting the 3270 Terminal application, you can disable this prompt. To do this, choose Options from the File pull-down, then choose Prompt to Save.

▽ **Caution:** We recommend that you end display emulation before you turn off or reboot your PC to prevent possible host connection problems. ■

Conducting 3270
Printer Emulation

In addition to 3270 display emulation, you can conduct 3270 printer sessions
with a host computer. This chapter explains how to customize and use 3270
printer emulation. It includes the following topics:

- Introducing the 3270 Printer application

- Preparing for 3270 printer emulation

- Starting 3270 Printer

- Setting up printer defaults and options

- Choosing and configuring your printer

- Activating and deactivating a printer session

- Using the printer control panel

- Exiting 3270 Printer

This chapter provides brief steps for per-
forming tasks. For a more complete
description of dialog boxes and their
options, use on-line help.

Introducing the 3270 Printer application

The 3270 Printer application enables a network printer or a printer attached to your PC to emulate a host printer. When you perform printer emulation, you use a screen that simulates a host printer control panel, complete with indicator lights and operator switches. You can use this panel to monitor and control the printer's operation.

Note: Printer emulation is not supported in TN3270 environments. ■

If your printer is configured to use Windows Print Manager, 3270 Printer sends your print files to the Windows Print Manager. The Print Manager operates in the background; you can continue working while it queues your files and sends them to the printer. You can check the status of the jobs and make changes to the print queue. See the *Microsoft Windows User's Guide* for additional information.

The 3270 Printer software is delivered with default settings for the printer. You can accept these defaults or you can configure new parameters that are more appropriate for your environment.

In the following sections you can find guidelines for starting 3270 Printer, setting up printer defaults and options, choosing and configuring a printer, activating and deactivating a printer session, and using the printer control panel. You can also find instructions for exiting 3270 Printer.

Preparing for 3270 printer emulation

To begin 3270 printer emulation, you will perform these tasks in the order shown:

● Choose the 3270 Printer application.

● Set up the printer defaults and extended options.

● Configure your printer.

● Activate a printer session.

● When you are about to begin printing, verify that the 3270 Printer application is ready for printing.

Each task is described in detail in this chapter.

Starting 3270 Printer

To start 3270 Printer, choose the 3270 Printer icon from the group window. The 3270 Printer action bar, shown in Figure 5-1, is displayed.


```
┌────────────────────────────────────────────────────────────────────┐
│ ▬        IRMA WorkStation: 3270 Printer - [Untitled] [F]        ▼   │
├────────────────────────────────────────────────────────────────────┤
│ File   Controls   Settings   Help                                  │
│ ┌─Printer Status─────────────────────────────────────────────────┐ │
│ │ Off line            Print job sent to:                         │ │
│ │ In session                                                     │ │
│ │ SCS mode                                                       │ │
│ │ Job in progress     Now printing page: 0   line:0             │ │
│ │ 0000 - no error                                                │ │
│ │                                                                │ │
│ │                                                                │ │
│ └────────────────────────────────────────────────────────────────┘ │
│ ┌─────────────┐ ┌─────────┐ ┌─────────┐ ┌────────────┐ ┌─────────┐ │
│ │ Ready print │ │   PA1   │ │   PA2   │ │ Cancel print│ │ Reprint │ │
│ └─────────────┘ └─────────┘ └─────────┘ └────────────┘ └─────────┘ │
└────────────────────────────────────────────────────────────────────┘
```
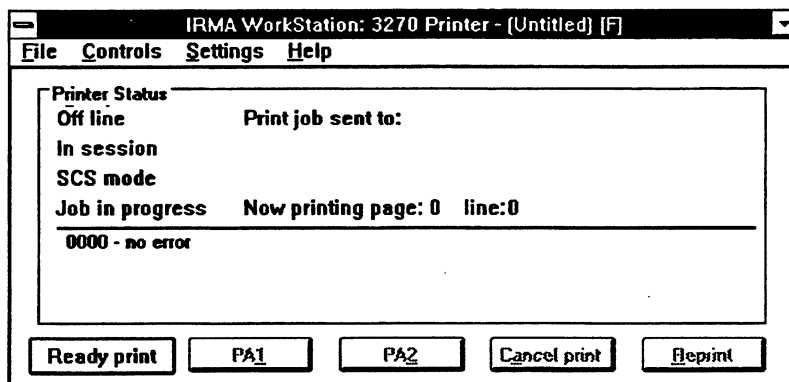
Figure 5-1.   3270 Printer main dialog box

Table 5-1 describes the action bar pull-downs.

Table 5-1.   3270 Printer pull-downs

Pull-down	Explanation
File	Lets you create and change 3270 Printer profiles; choose the desired printer and output device; set up the printer, the layout, and the fonts; and exit the 3270 Printer application.
Controls	Provides the option to activate or deactivate a printer session. This option changes from Activate to Deactivate. Note that you must choose a printer session before you can activate it.
Settings	Lets you choose a printer session, define printer defaults, and choose extended options.
Help	Provides on-line assistance. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."

Setting up printer defaults and options

You can define the following 3270 printer emulation parameters:

- Printer defaults

- Extended options

Note: The software provides default settings for these parameters. Check the default settings to ensure that they are right for your environment. If necessary, ask your system administrator for the correct settings. ■

The following paragraphs explain how to define printer defaults and extended options.

Defining printer defaults

To define printer defaults, complete the following steps:

1   Choose Printer Defaults from the Settings pull-down. The Printer Defaults dialog box is displayed.

2   Define the horizontal and vertical formats, character case, line spacing, and form-feed characteristics for printed output.

3   Choose OK to establish the settings.

Defining extended options

To define extended options, complete the following steps:

1   Choose Extended Options from the Settings pull-down. The Extended Options dialog box is displayed.

2   Set the Print Buffer Trace, End of Print Job Indicator, Passthru, and Transparent Data options.

3   Choose OK to establish the settings.

You can save your settings in a profile for future use. To do this, you must open a new or existing profile, set the parameters, and save the profile.

Choosing and configuring your printer

If you do not want to use the default printer, you must set up a different printer. To choose and configure a printer, follow these steps:

1 Choose Print Setup from the File pull-down. The Print Setup dialog box is displayed.

2 Specify a printer and an output destination in the Print Setup dialog box.

3 To set up the printer, choose Setup in the Print Setup dialog box. A printer-specific dialog box is displayed.

4 Make any desired changes and then choose OK to return to the Print Setup dialog box.

5 To define the print layout, choose Layout in the Print Setup dialog box. The Print Setup: Layout dialog box is displayed.

6 Specify the columns per page, page decorations such as headings, and the width and height of the paper.

The size of the paper should correspond to the paper size on which the host assumes it is printing. The printer emulation software reduces or stretches the image as required to fit in the printable area supported by your printer.

7 To set up the fonts, choose Fonts in the Print Setup: Layout dialog box. The Print Setup: Fonts dialog box is displayed.

8 Specify the font to use for the combinations of characters per inch and lines per inch. You can specify up to 16 combinations.

9 Choose OK to establish the printer configuration parameters.

You can save your configuration parameters in a profile for future use. To do this, you must open a new or existing profile, set the parameters, and save the profile.

Activating and deactivating a printer session

You can activate a printer session immediately, or you can choose a session now and activate it at a later time. Each process is explained in the following paragraphs.

Activating a session immediately

To activate a printer session immediately, follow these steps:

1   Choose Printer Sessions from the Settings pull-down. The Printer Sessions dialog box is displayed.

2   Specify the session.

3   Make sure the Auto Activate Session check box is checked. The default is Auto Activate Session.

4   Choose OK to activate the session.

You can save your activation parameters in a profile for future use. To do this, you must open a new or existing profile, set the parameters, and save the profile.

Activating a session at a later time

To choose a session now and activate it at a later time, follow these steps:

1   Choose Printer Sessions from the Settings pull-down. The Printer Sessions dialog box is displayed.

2   Specify the session.

3   Make sure the Auto Activate Session check box is not checked.

4   Choose OK to establish your choices.

5   When you are ready to start the session, choose Activate from the Controls pull-down.

Deactivating a session

The Controls pull-down option changes depending on the status of your printer session. If the printer session is active, the Controls pull-down shows Deactivate. Choose Deactivate to stop the current session.

Using the printer control panel

When you activate a printer session, your screen displays the simulated control panel of a mainframe printer, as shown in Figure 5-2.
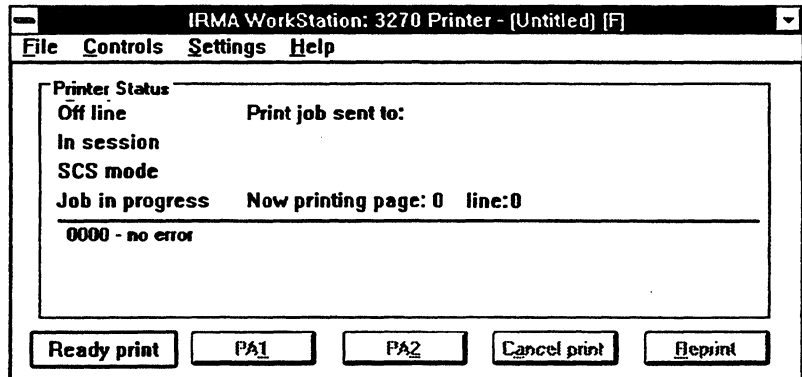
Figure 5-2.   Printer control panel

The following paragraphs explain the items in the printer control panel.

Ready Print and Hold Print

The options you can choose from the control panel vary depending on whether the 3270 Printer application is ready to print or is on hold. The status of the 3270 Printer application is controlled by the Ready Print/Hold Print pushbutton. (This pushbutton toggles between Ready Print and Hold Print.)

Ready print. Choose Ready Print to prepare the 3270 Printer application for printing. The panel reports the current status of the printer and indicates when printing is in progress.

Hold print. Choose Hold Print to put the 3270 Printer application on hold. Printing is interrupted if you activate Hold Print during a printer session. Before using the PA1, PA2, Cancel Print, or Reprint pushbutton, you must put the printer on hold.

Printer status

The printer status is described by a set of indicators and error codes. The following indicators appear on the control panel:

Off line/Ready. The Off Line indicator appears when a printer session is not active or if you have chosen Hold Print. The Ready indicator appears when the printer is ready to print.

In session. When a host printer session is active, the In Session indicator appears and the session ID is displayed. If the printer session is closed, the host printer link is placed on hold and is deactivated when all IRMA Work-Station for Windows applications are closed.

SCS mode. The SCS Mode indicator is grayed when the printer emulator is not processing SNA Character String data.

Print job sent to. This indicator tells you the name of the printer where the print job has been sent.

Job in progress. When a job is printing, the Job in Progress indicator appears. Other indicators tell you the current page number and the line being printed.

Print errors

If an error occurs, a 4-digit error code and brief error message appear in the lower portion of the dialog box. The Print Error status code is 0000 when printing is normal. If the printer encounters an error, a different code is displayed, as explained in Table 5-2.

Table 5-2.   Printer status codes

Code	Meaning
0000	No error.
0008	The Hold Print light has been on for more than 10 minutes.
0061	A PA1 key function was requested.
0062	A PA2 key function was requested.
0089	A Cancel Print function was requested.
0136	A Host Reprint function was requested.

SCS mode functions

Some pushbuttons are available only when the printer operates in SCS mode. These pushbuttons are not available unless the Hold Print function is activated when the emulator is processing SCS data. They are as follows:

PA1. This sends a PA1 key sequence to the host.

PA2. This sends a PA2 key sequence to the host.

Cancel print. This sends a Cancel Print key sequence to the host.

Reprint. This sends a Host Reprint key sequence to the host, causing the entire job to be reprinted.

Printing to a file

If you selected File as the output device when you set up your printer, Windows prompts you for the name of the file to which you want print output directed.

Exiting 3270 Printer

To exit 3270 printer emulation, choose Exit from the File pull-down. If you have made changes to a profile that have not been saved, the system asks whether you want to save the changes before leaving the application.

▼ **Caution:** We recommend that you end printer emulation before you turn off or reboot your PC to prevent possible host connection problems. ■

Transferring Files

In Chapter 4, "Conducting 3270 Display Emulation," you learned about the
display emulation features that enable your PC to communicate with a host
computer during a 3270 display session. This chapter explains how to use
your display emulation sessions to transfer files. It covers the following
topics:

- Introducing the File Transfer application
- Transferring a file
- Monitoring the status of a file transfer
- Stopping a file transfer in progress
- Logging file transfer information
- Clearing the file transfer queue
- Changing the file transfer settings
- Exiting the File Transfer application

This chapter provides brief steps for performing
tasks. For a more complete description of
dialog boxes and their options, use on-line
help.

Introducing the File Transfer application

You can transfer multiple files consecutively with DCA FT/Express, IRMA-LINK, IND$FILE, or PS/CICS (previously known as TRANSFER.COM) file transfer software. Transferring a file involves the following:

● Defining your file transfer environment

● Sending or receiving a file

● Monitoring the status of a file transfer

● Stopping the file transfer, if necessary

File transfer environments

The file transfer software is flexible to fit your environment. Before you start a file transfer, all you do is tell the software what host environment (CICS, CMS, or TSO) and file transfer software (FT/Express, IRMALINK, IND$FILE, or PS/CICS) you are using and then save the settings in a profile for later use.

Note: FT/Express is a separate DCA product that is packaged for specific host operating environments. For more information about FT/Express, refer to your FT/Express documentation. For a list of FT/Express manuals, refer to "Before You Begin" at the beginning of this guide. ■

Figure 6-1 illustrates the file transfer environments that are supported. Check with your system administrator for information about your file transfer environment.

CMS Environment	FT/Express Transfer Program
	IBM 3270 Transfer Program
	IRMALINK Transfer Program

MVS/TSO Environment	FT/Express Transfer Program
	IBM 3270 Transfer Program
	IRMALINK Transfer Program

| CICS Environment | PS/CICS Transfer Program |
| | IBM 3270 Transfer Program |
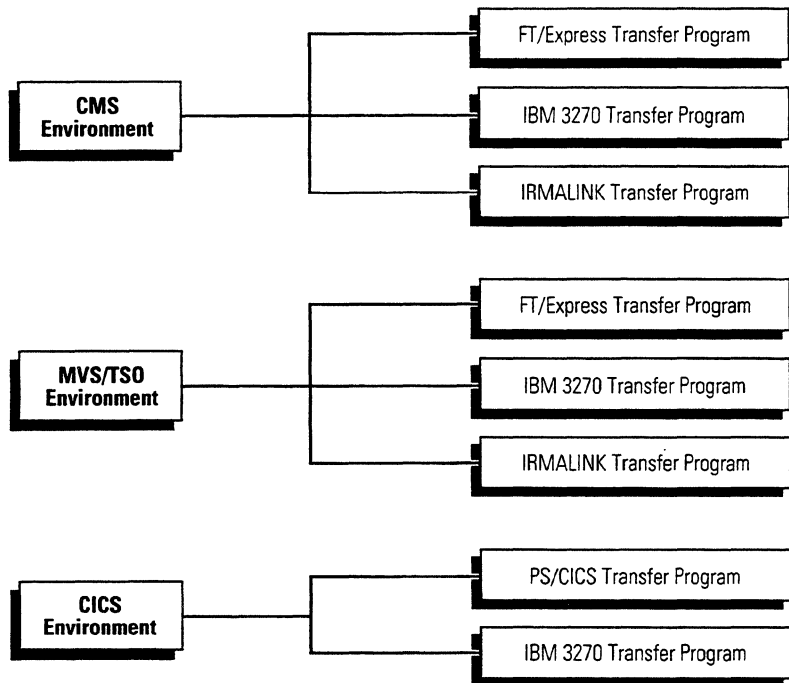
Figure 6-1.   File transfer environments

Transferring a file

This section provides step-by-step instructions on how to transfer a file. There are two tasks involved in completing a file transfer:

● Starting the File Transfer application

● Initiating the transfer

The instructions explain how to transfer files using the default settings provided with the software. Check the default settings to ensure that they are right for your environment. If necessary, ask your system administrator for the correct settings. If you need to change the defaults, refer to "Changing the File Transfer Settings" later in this chapter.

Note: If you are an international user and want to transfer a text file created by a Windows application, you should first save it as a DOS text file so that accented characters are translated correctly. ■

Starting the File Transfer application

Before you start the File Transfer application, you must activate a display emulation session using the 3270 Terminal application and log on to the host computer. Chapter 4, "Conducting 3270 Display Emulation," explains how to activate a session and log on to the host.

Note: You or your system administrator may have designated a session to be activated at start-up through SISL or by a HLLAPI application. If so, you can skip steps 1 and 2 and simply choose File Transfer from the 3270 Terminal File pull-down. For more information about SISL, refer to the *DCA Script User's Guide*. For more information about HLLAPI, refer to the *DCA HLLAPI Programmer's Guide* provided in the optional DCA HLLAPI Software Developer's Tool Kit. ■

Complete the following steps to start the File Transfer application. If you already have an active host session, you can begin with step 4:

1   Choose the 3270 Terminal icon from the group window.

2   Choose Terminal Sessions from the Settings pull-down and specify the session in which you want the file transfer to take place.

3   Log on to the host.

4   Choose File Transfer from the File pull-down. The File Transfer dialog box, shown in Figure 6-2, is displayed. Note that this dialog box is for the default file transfer program, IND$FILE, and the default environment, CMS. The dialog box and pull-downs change when you specify a different program and environment.

IRMA WorkStation for Windows: File Transfer - [Untitled][A] - IND$FILE/CMS

File   Settings   Status   Help

Direction
◉ Send to host
○ Receive from host

Host Session
Session ID: A

PC File
File name: *.*
Directory is: c:\irmawin
Files
101key.pkl
101us.kbd
102key.pkl
3191key.pkl
3191us.kbd
84key.pkl

Directories
[..]
[-a-]
[-c-]

Host File
Host file name type mode:

Host Files
Files

List   Next   Stop

Start Transfer   Help
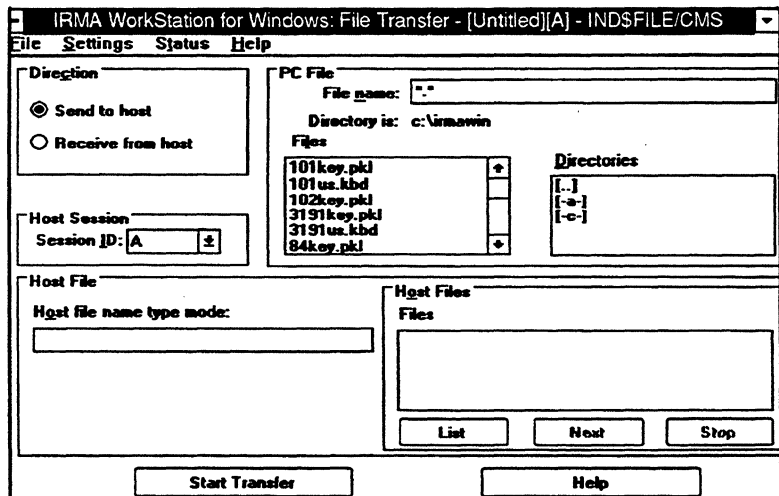
Figure 6-2.   File Transfer dialog box

Table 6-1 describes the File Transfer action bar pull-downs.

Table 6-1.   File Transfer pull-downs

Pull-down	Description
File	Lets you create and save File Transfer profiles and exit the File Transfer application.
Settings	Lets you choose file transfer options and define host data-set and system parameters for your environment.
Status	Lets you check the status of any file transfer.
Help	Provides on-line assistance. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."

Note: If you are using FT/Express, you can type the following command at the 3270 emulation screen prompt to request a host-initiated file transfer:

EXPRS *hostfilename* **TO|FROM PC**(*filename*) [*options...*]

If you use this command, the transfer parameters in the File Transfer dialog box are ignored. For more information on host-initiated file transfers, refer to the *FT/Express Host-Initiated File Transfer User's Guide.* ■

Initiating the transfer

Before you can transfer a file, you must know which file transfer environment to use. If you are not sure, check with your system administrator. The instructions explain how to start the transfer using the default options, host data-set settings, and system settings. For instructions on changing the default settings, refer to "Changing the File Transfer Settings" later in this chapter.

You can initiate multiple file transfers consecutively. While the first file is being sent or received, subsequent transfers for the same host session are queued and automatically started when the previous transfer is completed. Only one file transfer can be active for a particular host session at any given time. However, you can transfer files simultaneously using different host sessions for each transfer.

After you start the file transfer, you can monitor its status. Refer to the next section, "Monitoring the Status of a File Transfer," for more information.

To complete the File Transfer dialog box, shown in Figure 6-2, follow these steps. If both the default file transfer program (IND$FILE) and the default environment (CMS) are acceptable, or if you have already specified these parameters for this session, you can begin with step 2:

1 Choose your file transfer program and environment from the Settings pull-down.

2 Specify Send to Host or Receive from Host, depending on the direction of the file transfer you need to perform.

3 Complete the File Transfer dialog box by specifying the host Session ID, PC File Name, and Host File Name information:

● For a list of host file names, choose the List pushbutton from the Host Files group box. (This is applicable only if you have not filled in the file name information or have used the *.* wild-card specification.)

● If you are using FT/Express, you can transfer multiple files in one operation by using the asterisk (*) wild card in the host and PC file name specifications. Choose Help for information on FT/Express multiple transfers.

4 Choose Start Transfer to begin the file transfer.

Monitoring the status of a file transfer

You can monitor the status of a file transfer in the following ways:

● By checking the File Transfer icon

● By viewing the File Transfer status indicator

● By using the Status dialog box

Checking the File Transfer icon

After you begin a file transfer, you can monitor its progress by checking the File Transfer icon. This icon displays the number of bytes of data that have been sent to or received from the host.

Viewing the File Transfer status indicator

You can double-click on the File Transfer icon to display a message window containing a graphical bar that illustrates the progress of the file transfer. This indicator also shows the percentage complete for the file transfer. You can position the message window anywhere on the file transfer screen. Once you select the size and position of the window, your customized window is used every time you transfer a file.

When you are receiving a file, the status indicator is displayed only if you chose a host file from the Host Files group box on the File Transfer dialog box, shown in Figure 6-2. Also, you cannot view the status indicator if you are receiving a file with a variable-length record format.

Using the Status dialog box

You can also monitor the progress of a file transfer by selecting Status from the File Transfer action bar. Choosing Status displays the dialog box shown in Figure 6-3.

```
┌──────────────────────────────────────────────────────────────┐
│                            Status                              │
│                                                                │
│   Profile    Session ID    Direction    Bytes      Status      │
│  ┌─────────────────────────────────────────────────────────┐  │
│  │ (untitled)     A          send                  complete │  │
│  │ (untitled)     A          send                  complete │  │
│  │ (untitled)     A          send                  complete │  │
│  │                                                          │  │
│  └─────────────────────────────────────────────────────────┘  │
│                                                                │
│           Profile:  [untitled]                                 │
│      PC File Name:  W:\XFER\ATERM.ZIP                          │
│      Host Dataset:  A:aterm zip b                              │
│  Transfer Command:  SEND /E /Q /W /V                           │
│  Messages                                                      │
│  ┌────────────────────────────────────────────────────────┐   │
│  │ 08/15/91,15:10:48 SEND /E /Q /W /V W:\XFER\ATERM.ZIP A:aterm│▲│
│  │   b                                                    │   │
│  │ 08/15/91,15:10:48 TRANS01  File transfer command being │   │
│  │   processed                                            │   │
│  │ 08/15/91,15:12:28 TRANS02  Number of bytes of file transferred│▼│
│  └────────────────────────────────────────────────────────┘   │
│    ┌──────────┐      ┌──────────┐       ┌──────────┐           │
│    │    OK    │      │  Delete  │       │   Help   │           │
│    └──────────┘      └──────────┘       └──────────┘           │
└──────────────────────────────────────────────────────────────┘
```

Figure 6-3.   Status dialog box

The status of each file transfer is shown in the right-hand column of the top list box. Table 6-2 describes the file transfer status categories.

Table 6-2. File transfer status categories

Status	Description
Error	The transfer terminated with an error condition.
Running	A file transfer is in progress on this session. The number of bytes already transferred is shown.
Complete	A file transfer has been completed. The total number of bytes transferred is shown.
Queued	The transfer is queued and will be started as soon as the session is available.

From the list box, highlight the specific file transfer for which you want status information. If more file transfers exist than can be displayed at one time, you can scroll to display them. When you choose a particular file transfer, it is highlighted and the pertinent messages are automatically displayed. Choose Help for explanations of error messages.

Stopping a file transfer in progress

To stop a file transfer in progress, perform the following steps:

1   Choose Status from the File Transfer action bar. The Status dialog box, shown in Figure 6-3, is displayed.

2   Select the particular file transfer from the Status list box.

   Note: If the file transfer you want to stop is already running, close the file transfer icon to stop the transfer. ■

3   Choose Delete to stop the selected file transfer.

You can also stop a file transfer in progress by closing the File Transfer window.

Logging file transfer information

The file transfer log file contains status information about the file transfer. If a file transfer is unsuccessful, you can review the log file to determine the source of the problem.

If you want to change the size of the log file or disable the logging feature, modify the parameters in the Logging Options dialog box. To access this dialog box, choose Logging from the File pull-down. For more information about this dialog box, refer to the on-line help.

Clearing the file transfer queue

You must periodically delete completed transfers from the file transfer queue to reduce the number of transfer status records contained in the log file. Perform the same steps you would take to stop a file transfer as described in the section, "Stopping a File Transfer in Progress." You can also clear the file transfer queue by deleting the FXFERLOG.X files from Windows File Manager. The X stands for the session short name(s).

Changing the file transfer settings

This section describes how to change the file transfer settings. You need to do this only if you want to use settings other than the defaults or to create different file-transfer profiles. For example, you may want to change the file format, message display information, or host time-out periods.

You can specify the following file transfer parameters to match your host operating environment (CMS, TSO, or CICS) and your file-transfer program (FT/Express, IRMALINK, IND$FILE, or PS/CICS):

● Options

● Host data-set settings

● System settings

The following paragraphs explain how to define these parameters for your file transfer environment. The settings you specify remain in effect for the session. If you want to initiate a file transfer that requires different settings, you must specify new parameters.

Defining options

To define options, such as data format, complete the following steps:

1   Choose Options from the Settings pull-down. The Options dialog box for your file transfer environment is displayed.

2   Define the applicable options.

    Note: If you are using FT/Express to transfer files and you want to compress the data before transmitting it, select the Compress check box. The host receiving the data automatically expands the data at the other end; this results in a faster file transfer. ■

3   Choose OK to establish the settings.

Defining host data-set settings

To define host data-set settings, such as record format and length, complete the following steps:

1   Choose Host Dataset from the Settings pull-down. The Host Dataset dialog box for your file transfer environment is displayed.

2   Define the applicable data-set settings.

3   Choose OK to establish the settings.

Defining system settings

To define system settings, such as host time-out and message options, complete the following steps:

1   Choose System Settings from the Settings pull-down. The System Settings dialog box for your file transfer environment is displayed.

2   Define the applicable system settings.

3   Choose OK to establish the settings.

You can save your settings in a profile for future use. To do this, you must open a new or existing profile, choose the settings, and save the profile.

Exiting the File Transfer application

To exit the file transfer application, choose Exit from the File pull-down. If you have made changes that have not been saved, the program asks whether you want to save the changes before leaving the application.

▼ **Caution:** We recommend that you stop any file transfers before you turn off or reboot your PC to prevent possible host connection problems. ■

Using the Keyboard Editor

You can reconfigure your keyboard to make it easier to use when conducting 3270 emulation or working with other applications. This chapter explains how to use the Keyboard Editor to remap your keyboard. It covers the following topics:

- Introducing the Keyboard Editor
- Starting the Keyboard Editor
- Displaying keyboard and QuickPad profiles
- Remapping your keyboard
- Working with QuickPad
- Working with keyboard macros
- Printing keyboard layouts
- Exiting the Keyboard Editor

This chapter provides brief steps for performing tasks. For a more complete description of dialog boxes and their options, use on-line help.

Introducing the Keyboard Editor

The Keyboard Editor lets you create a customized keyboard or QuickPad. You can choose from a number of different keyboards, including the standard keyboard, the enhanced keyboard, the 3191 keyboard, and the 122-key keyboard. In addition, you can use the Keyboard Editor to remap functions to different keys.

After you are comfortable with 3270 emulation, you may find that you want to change the location of some of the 3270 function keys. For example, you may want to switch the alternate cursor key function from [Alt] [F5] to [Alt] [a] to make it easier to remember. Or you may want to change your keys to be consistent with other applications you use.

The Keyboard Editor lets you rearrange the characters and functions on your keyboard by allowing you to edit the keyboard profile (*.KBD) and the Quick-Pad profile (*.QBD). You can set up multiple keyboard profiles; however, you can use only one keyboard profile at a time. If you want to change profiles, terminate all IRMA WorkStation for Windows applications and use the 3270 Configurator to choose a different profile.

Note: The Attention ([ATTN]) and System Request ([SYSREQ]) keys are not supported in TN3270 environments. Also note that the IBM Entry Assist Mode keys are supported only for keyboard profiles configured for a CUT connection. ■

International keyboards

The Keyboard Editor supports international keyboards. The profiles for these keyboards have unique names. The format of the profile names is as follows:

XXYNNN.KBD

The following paragraphs explain the format:

XX	This is the country code; for example, UK.
Y	This is the CECP indicator. There are two possible values:
	C CECP character set.
	N Non-CECP character set.
NNN	This is the number of keys on the keyboard; for example, 102.
.KBD	This is the file name extension.

Keyboard profiles that are based on a CECP character set usually have more characters mapped on the keyboard than those that are based on a non-CECP character set. You can use the Keyboard Editor's Key List Editor feature to map any CECP characters you want on your keyboard profile. For non-CECP character sets, only the existing characters on the non-CECP keyboard profile are valid. For more information about the Key List Editor, see "Using the Key List Editor" later in this chapter.

Starting the Keyboard Editor

To begin working with the Keyboard Editor, you need to start it. Choose the Keyboard Editor icon from the group window. The Keyboard Editor action bar, shown in Figure 7-1, is displayed.
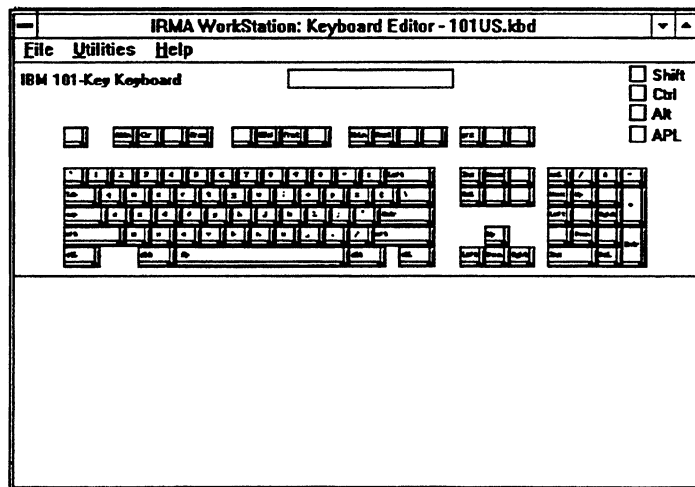
Figure 7-1. Keyboard Editor action bar

Note that the current keyboard, which you either specified when you configured IRMA WorkStation for Windows or set up when you last used the Keyboard Editor application, is displayed in the window.

Table 7-1 describes the action bar pull-downs.

Table 7-1. Keyboard Editor pull-downs

Pull-down	Explanation
File	Lets you work with keyboard profiles and exit the Keyboard Editor. You can create new profiles, modify existing profiles, and print your keyboard layouts.
Utilities	Provides options to display the default keyboard profile, view another keyboard profile, copy one profile to another, add a new function to a key, define macros, and list the keys and macros available on the working profile. To perform keyboard profile functions, choose Key List Editor. To perform macro functions, choose Macro Editor.
Help	Provides on-line assistance. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."

In the sections that follow, you will learn how to display keyboard and Quick-Pad profiles, customize your keyboard, and work with QuickPad and macros.

Displaying keyboard and QuickPad profiles

To perform such functions as setting up a new keyboard profile and remapping a profile, you must display the keyboard profile. This section explains how to display keyboard profiles.

You can display two keyboard profiles at the same time:

● The first is a working profile that you can customize.

● The second is a read-only profile, or template, from which you can copy key functions or the entire keyboard.

The following sections explain how to display these profiles.

Displaying the working profile

The working profile is displayed in the top half of the Keyboard Editor window. The keys are color coded, as described in Table 7-2.

Table 7-2.   Color-coded keys in the Keyboard Editor

This key color...	Means...
Yellow	This is one of the emulator's accelerator keys.
Red	This key cannot be mapped under any circumstance.
Cyan (blue)	This key is currently not mapped to a specific function, so it can be remapped.
Magenta (pink)	This key cannot be moved, but you can map other keys to it.

The procedure you use to display a working profile depends on whether you are displaying a new profile or an existing profile. The following paragraphs explain each procedure.

Displaying a new profile

To display a new keyboard profile, choose New from the File pull-down and then choose the type of keyboard you are creating. Your choices include a QuickPad, or a 101-key, 102-key, 84-key, or 122-key keyboard. The specified keyboard type is displayed (with blank key caps) in the top half of the Keyboard Editor window.

Displaying an existing profile

To display an existing profile, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Specify the working profile name.

3   Choose Open to display the profile.

Displaying the read-only profile

The read-only profile is displayed in the bottom half of the Keyboard Editor window. You cannot change this profile, but you can use it to copy key functions or the entire profile to the working profile in the top half of the window.

To display a read-only profile, follow these steps:

1   Choose View Profile from the Utilities pull-down. The View Profile dialog box is displayed.

2   Specify the read-only profile name.

3   Choose View to display the profile.

Figure 7-1, earlier in this chapter, shows the Keyboard Editor window with a working keyboard profile.

Remapping your keyboard

The Keyboard Editor assists you in remapping your keyboard layout. You can do the following:

● Create a new keyboard

● Remap keyboard functions

● Use the Key List Editor to add a new function

If you are creating a new keyboard profile, you need to set up a keyboard before you can remap functions or add new functions. Follow the instructions in "Setting Up a New Keyboard" to create your working profile.

When you are ready to remap your keyboard, turn to the section "Remapping Keyboard Functions." This section and the section that follows it, "Using the Key List Editor," explain how to modify your working profile.

After you customize your keyboard, you can print the revised setup. See "Printing Keyboard Layouts" at the end of this chapter for instructions.

Creating a new keyboard

To create a new keyboard, follow these steps:

1   Choose New from the File pull-down and then choose the type of keyboard you are creating—a 101-key, 102-key, 84-key, or 122-key keyboard. The specified keyboard type is displayed (with blank key caps) in the top half of the Keyboard Editor window. This is the working keyboard profile.

2   If you want to use a read-only profile to copy key functions, do the following:

● Choose View Profile from the Utilities pull-down. The View Profile dialog box is displayed.

● Open the appropriate profile. The selected read-only profile is displayed in the bottom half of the Keyboard Editor window.

3   To remap the new keyboard, do one of the following:

- Drag keys from one location to another in the working profile or from the read-only profile.

- Choose Copy Bottom to Top from the Utilities pull-down to copy the contents of the read-only profile into the working profile.

- Choose the Key List Editor from the Utilities pull-down to add a new key function, as explained in "Using the Key List Editor," later in this chapter.

4   Choose Save As from the File pull-down. The Save As dialog box is displayed.

5   Specify the name under which you want to save the profile. The .KBD extension is added for you.

6   Choose Save to save the profile.

Remapping keyboard functions

Remapping your keyboard means moving a key function or character to a different key. You do this by dragging a function or character from one location to another.

This section defines standard, modifier, and combination keys; and tells how to remap them by moving a function, deleting a function, and swapping functions.

Remapping modifier and combination keys

You can use three types of keys as you remap your keyboard: standard keys, modifier keys, and combination keys. A standard key is any key that is pressed alone, such as the lowercase letter "d." A modifier key is one that, when pressed in combination with another key, changes the function of that key. A combination key is a combination of a modifier key and a standard key, such as Ctrl D.

Modifier keys include Shift, Ctrl, and Alt. The Keyboard Editor displays check boxes at the top of the Keyboard Editor window for the Shift, Ctrl, and Alt key states as well as a check box for the APL key state. These options display the profile's key functions for each modifier's shifted key states, check the Ctrl box for the Ctrl key states, check the APL box to display the APL keyboard, and so forth. For more information on APL, see Appendix G, "Using APL."

You can remap keys within one modifier state. For example, if a function is currently mapped to [Ctrl] [D], you can remap it to [Ctrl] [F10]. You can also re-map keys across modifier states, such as changing [Ctrl] [F10] to [Alt] [F10]. To copy a function from one modified key state to another, you must copy the function from the read-only profile to the working profile.

The Keyboard Editor also lets you change extended (multiple modifier) key states. For example, if a function is currently mapped to [Ctrl] [d], you can remap it to [Ctrl] [Shift] [d]. You cannot move the modifier keys [Shift], [Ctrl], and [Alt] to another key position.

In the following sections you will find guidelines for moving, deleting, and swapping functions.

▽ **Caution:** Do not assign functions to the standard or shift positions of alphabetic keys; this erases your alphabetic characters. Also, do not assign functions to the Shift position of a key that has a symbol in that position, such as the asterisk (*) on the number 8 key. ■

Moving a function

The following example explains how to move a function. Suppose that on a 101-key keyboard, the Clear function is mapped to [F2]. Assume that to make the location of the Clear function easier to remember, you want to move it to [Alt] [c]. To move the keys, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Open the working keyboard profile. It is displayed in the top half of the Keyboard Editor window.

3   Check the Alt check box on the working profile. The Alt key states for the working profile are displayed.

4   Choose View Profile from the Utilities pull-down. The View Profile dialog box is displayed.

5   Choose the keyboard profile you want to use (in this case the 101-key keyboard), and then choose View. The selected read-only profile is displayed in the bottom half of the Keyboard Editor window.

6   Move the pointer to the Clear key on the read-only keyboard profile, and choose this key. Do not release the mouse button. The cursor changes from an arrow to a black key containing the plus sign (+).

7   Drag the Clear function to the [c] key on the working profile, then release the mouse button. The Clear function is now assigned to the [Alt] [c] keys and Clr is displayed on the key cap.

8   Choose Save from the File pull-down to save the changes.

Note: When you drag a function or character to a key on the working profile, the new function or key overwrites the current function (if any). To copy the overwritten function to another key, drag it from the read-only profile. ■

Deleting a function

In the previous example, you copied the Clear function to ⒜ ⒞. It is now mapped to both ⒡2 and ⒜ ⒞. Since you probably do not want the Clear function mapped to two keys, follow these steps to remove the Clear function from ⒡2 on the working profile:

1   Make sure no key states are checked on the working profile.

2   Move the pointer to the Clear function mapped to the ⒡2 key and choose it. Do not release the mouse button. The cursor changes from an arrow to a black key containing the plus sign (+).

3   Drag the Clear function off the working profile and onto the desktop, and then release the mouse button. The ⒡2 key position is now empty and the function is deleted from that location.

4   Choose Save from the File pull-down to save the changes.

Note: If you accidentally remove a function, replace it by dragging it from the read-only profile to the working profile. ■

Swapping functions

This example describes how to swap functions between two keys. For example, suppose the 101-key keyboard profile has the Attention function mapped to ⒡1 and the Clear function mapped to ⒡2. To switch these two functions, follow these steps:

1   Move the pointer to the ⒡1 key on the working profile, and click the right mouse button. Do not release the right mouse button. The cursor changes from an arrow to a black key containing two arrows.

2   While still holding down the right mouse button, move the ⒡1 key on top of the ⒡2 key on the working profile and release the right mouse button. The two keys are switched. ⒡1 is now the Clear function and ⒡2 is now the Attention function.

3   Choose Save from the File pull-down to save the changes.

Using the Key List Editor

Another way to add a new 3270 function or character to the working profile is by using the Key List Editor. This method is useful if the function or character you need to map is not on the working profile or on the read-only profile.

Note: Make sure you use the CECP character set if you require a CECP character that is not already mapped on your keyboard profile. ■

The following example shows how to add a function or character to a working keyboard profile. The instructions assume that you are modifying an existing profile.

Suppose that you want to add the Device Cancel function to the ⟨Alt⟩ ⟨F12⟩ keys on your keyboard profile. To add this function, follow these steps:

1 Check the Alt check box on the working profile. The Alt key states for the profile are displayed.

2 Choose Key List Editor from the Utilities pull-down. The Key List Editor dialog box is displayed.

3 On the working profile, double-click on the ⟨F12⟩ key. The key is filled with a bright color. The Key List Editor dialog box reflects the current key type and function in the Type and Keys list boxes (if the key is mapped).

4 Choose 3270 from the Type list box. The Keys list box displays the functions available for that key type.

5 Choose DevCancel (Device Cancel) from the Keys list box and then choose Assign.

   The Device Cancel function is mapped to ⟨Alt⟩ ⟨F12⟩ on your working keyboard profile.

6 Choose Save from the File pull-down to save your changes.

Working with 122-key keyboards

IRMA WorkStation for Windows supports the IRMAkey/3270 and the Memorex-Telex 122-key keyboards, which have keyboards that differ in several ways. You can remap the keys on either keyboard, if necessary, to better suit your needs. The following list describes the differences in the keyboards and explains how these differences are resolved in the default profile:

● The location of the ⟨CrSel⟩ key is different on the keyboards. To resolve this, the default profile maps the function to both key positions since no other function is required for the duplicate key on either keyboard.

- On the IRMAkey/3270 keyboard, Erase Input is the base state of the [Erlnp] key, while on the Memorex-Telex keyboard, it is the alternate state for the same key. To resolve this, the default profile maps the function to the alternate state for both keyboards. This corresponds to the functionality of a 3278 keyboard and protects you from unintentionally erasing input.

- On the IRMAkey/3270 keyboard, the legend on the key in the upper-right corner is '='. The same key on the Memorex-Telex keyboard shows an '*'. To resolve this, the default profile maps a [Space] key to this location. This corresponds to the functionality of a 3278 keyboard.

- The keys [DCA1], [DCA2], [DCA3], and [DCA4] surrounding the cursor pad are found only on the IRMAkey/3270 keyboard. You can map functions to these keys; however, the functions will work only for the IRMAkey/3270 keyboard. The default profile does not map any functions to these keys.

- On the IRMAkey/3270 keyboard, the placement of the [Alt] and [Ctrl] keys is reversed from all other keyboards. The IRMAkey driver maps these keys as they are labeled—[Alt] on the left and [Ctrl] on the right. This means that the scan codes are reversed from those in the default profile. Therefore, when you press [Ctrl], you activate [Alt], and when you press [Alt], you activate [Ctrl].

Working with QuickPad

QuickPad is a tool that allows you to assign commonly used functions to a QuickPad that you can use with your 3270 sessions. The software is delivered with a default QuickPad (DEFAULT.QBD). You can change this one or create a new QuickPad customized to your needs.

The following sections describe how to create a new QuickPad and modify an existing QuickPad.

Creating a new QuickPad

To create a new QuickPad, follow these steps:

1   Choose New from the File pull-down and then choose QuickPad. The New QuickPad Dimensions dialog box is displayed.

2   Specify the dimensions for your new QuickPad and choose OK.

3 If you want to use a read-only profile to copy key functions, do the following. Otherwise, continue with step 4:

● Choose View Profile from the Utilities pull-down. The View Profile dialog box is displayed.

● Open the appropriate profile. The selected read-only profile is displayed in the bottom half of the Keyboard Editor window.

4 Set up the QuickPad by dragging keys from the read-only profile or by using the Key List Editor from the Utilities pull-down.

5 Choose Save As from the File pull-down to save the keypad. Be sure to specify a .QBD extension. If you do not specify an extension, .QBD is added for you.

You can now use this QuickPad when running a terminal session as well as with the Keyboard Editor. For more information on how to modify the QuickPad, refer to "Remapping Your Keyboard" earlier in this chapter.

Modifying an existing QuickPad

To make changes to an existing QuickPad, follow these steps:

1 Choose Open from the File pull-down. The Open dialog box is displayed.

2 Open a .QBD file. The selected QuickPad is displayed in the top half of the Keyboard Editor window.

3 If you want to use a read-only profile to copy key functions, do the following:

● Choose View Profile from the Utilities pull-down. The View Profile dialog box is displayed.

● Open the appropriate profile. The selected read-only profile is displayed in the bottom half of the Keyboard Editor window.

4 Modify the QuickPad by doing one of the following:

● Drag keys from one position to another on the new QuickPad or from the read-only profile.

● Choose Copy Bottom to Top from the Utilities pull-down to copy the contents of the read-only profile onto the new QuickPad.

● Choose the Key List Editor from the Utilities pull-down to add a new key function, as explained in "Using the Key List Editor," later in this chapter.

5 Choose Save from the File pull-down to save the profile under the same name, or choose Save As to save it under a different name. If you save it under a different name, be sure to specify a .QBD extension. If you do not specify an extension, .QBD is added for you.

You can now use this QuickPad when running a terminal session as well as with the Keyboard Editor. For more information on how to modify the Quick-Pad, refer to "Remapping Your Keyboard" earlier in this chapter.

Assigning a script to a QuickPad key

You can assign a script created with QuickScript to a QuickPad key for use during your 3270 sessions. For instance, you can click on a QuickPad key to run a script that activates an emulation session and logs on to a host. You must have created and compiled the script using QuickScript before you can assign it to a QuickPad key.

There are two ways to assign a script to a key on a QuickPad:

● Using the Define Scripts dialog box

● Using the Key List Editor

The following paragraphs explain how to use each method.

Using the Define Scripts dialog box

To assign a script to a QuickPad key using the Define Scripts dialog box, follow these steps:

1 Choose Open from the File pull-down. The Open dialog box is displayed.

2 Open the QuickPad file. The specified QuickPad is displayed in the top half of the Keyboard Editor window.

3 Choose Assign QuickScripts from the Utilities pull-down.

4 On the QuickPad, double-click on the key to which you want the macro assigned. The key is filled with a bright color.

5 Enter the script legend that is to appear on the QuickPad key (up to 4 alphanumeric characters) in the Script Legend edit box.

6 Enter a description of the script in the Script Description edit box.

7 In the Script File edit box, enter the compiled script file name to be assigned to a QuickPad key. Use Browse for Script File to display the available script files (the Browse dialog box defaults to a script file extension of .ISX).

8   Choose Define. The script is defined for use with IRMA WorkStation for Windows.

9   Choose Assign. The script is assigned to the selected key on the QuickPad and the script legend is displayed on the key cap.

Note: You can also assign the script by double-clicking on the script in the Browse list box. ■

Using the Key List Editor

You can also assign a script to a key using the Key List Editor. To assign a script in this way, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Open the QuickPad profile. The specified QuickPad is displayed in the top half of the Keyboard Editor window.

3   Choose Key List Editor from the Utilities pull-down. The Key List Editor dialog box is displayed.

4   On the QuickPad, double-click on the key to which you want the macro assigned. The key is filled with a bright color.

5   Choose Script Keys from the Type list box in the Key List Editor dialog box. The descriptions of the scripts for your QuickPad are displayed in the Keys list box.

6   Choose the compiled script you want to assign to the key.

7   Choose Assign. The script is assigned to the selected key on the QuickPad and the script legend is displayed on the key cap.

Note: You can also assign the script by double-clicking on the script entry shown in the Keys list box. ■

Working with keyboard macros

Macros are used to automate a keystroke or sequence of keystrokes that you use frequently. For example, you can create a macro to enter your user ID. Use the Macro Editor to create macros and save them for future use. You can also use the Macro Editor to assign a macro to a key on the QuickPad.

Macros are contained in a QuickPad file. You can use the Macro Editor only if you are using QuickPad.

In the following sections, you can find instructions for creating a macro and assigning the macro to a QuickPad key.

Creating a macro

To create a keyboard macro, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Open the .QBD file in which you want to save the macro. The specified QuickPad is displayed in the top half of the Keyboard Editor window.

3   Choose Macro Editor from the Utilities pull-down. The Define Macros dialog box is displayed.

4   Enter a name and a description for your macro.

5   In the Macro edit box, type the commands or instructions you want executed by this macro. You can type information or add keys from the Type and Keys list boxes by double-clicking on the key you want to add.

6   Choose Define to save the macro. You can now assign this macro to a key on the QuickPad or create another macro.

Assigning a macro to a QuickPad key

When you assign a macro to a key, you can use it during your 3270 sessions. There are two ways to assign a macro to a key on a QuickPad:

● Using the Define Macros dialog box

● Using the Key List Editor

The following paragraphs explain how to use each method.

Using the Define
Macros dialog box

After you define a macro using the Macro Editor, you can assign it to a key on the QuickPad. To assign a macro to a key, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Open the QuickPad profile. The specified QuickPad is displayed in the top half of the Keyboard Editor window.

3   Choose Macro Editor from the Utilities pull-down.

4   On the QuickPad, double-click on the key to which you want the macro assigned. The key is filled with a bright color.

5   Choose Macro Keys from the Type list box in the Define Macros dialog box. The descriptions of the macros are displayed in the Keys list box.

6   Choose the macro you want to assign to the key.

7   Choose Assign. The macro is assigned to the selected key on the Quick-Pad and the macro legend is displayed on the key cap.

    Note: You can also assign the macro by double-clicking on the macro in the Keys list box. ■

Using the Key List
Editor

You can also assign a macro to a key using the Key List Editor. To assign a macro in this way, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Open the QuickPad profile. The specified QuickPad is displayed in the top half of the Keyboard Editor window.

3   Choose Key List Editor from the Utilities pull-down. The Key List Editor dialog box is displayed.

4   On the QuickPad, double-click on the key to which you want the macro assigned. The key is filled with a bright color.

5   Choose Macro Keys from the Type list box in the Key List Editor dialog box. The descriptions of the macros for your QuickPad are displayed in the Keys list box.

6   Choose the macro you want to assign to the key.

7   Choose Assign. The macro is assigned to the selected key on the Quick-
     Pad and the macro legend is displayed on the key cap.

     Note: You can also assign the macro by double-clicking on the macro
     in the Keys list box. ■

Printing keyboard layouts

After you remap your keyboard, you may want to print a copy of the revised
layout. You can print either a copy of the layout, which shows a graphical
image of the keyboard, or a copy of the text, which lists the key legends and
scan codes.

Before you print your keyboard layout, however, you may want to change your
printer settings. The Keyboard Editor software is delivered with default printer
settings. You can configure the printer to change the defaults, if needed. To
configure the printer, follow these steps:

1   Choose Print Setup from the File pull-down. The Print Setup — Screen
     dialog box is displayed.

2   Choose the printer and output device.

3   To set up the printer, choose Setup in the Print Setup — Screen dialog
     box. A printer-specific dialog box is displayed.

4   Specify the appropriate output parameters such as the page orientation,
     paper source, and paper size.

5   Choose OK to establish the configuration parameters.

To print the keyboard layout, choose Print from the File pull-down and then
choose Layout.

To print the text, choose Print from the File pull-down and then choose Text.

Exiting the Keyboard Editor

To exit the Keyboard Editor, choose Exit from the File pull-down. You are
prompted to save any unsaved changes before exiting the application.

Using Asynchronous Terminal Emulation

IRMA WorkStation for Windows provides a way for your PC to emulate HP or DEC VTxxx terminals and transfer files between your PC and a host computer. This chapter explains how to customize and use the DEC or HP terminal emulation feature. It covers the following topics:

● Introducing asynchronous terminal emulation

● Starting asynchronous terminal emulation

● Defining communications session parameters

● Connecting and disconnecting a communications session

● Uploading a file to a host computer

● Capturing data on your PC

● Transferring files

● Stopping a file transfer in progress

● Exiting asynchronous terminal emulation

This chapter provides brief steps for performing tasks. For a more complete description of dialog boxes and their options, use on-line help.
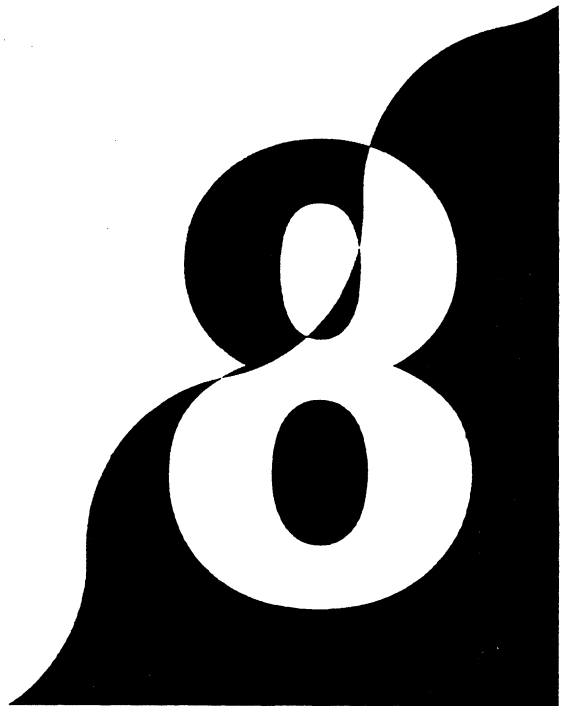
Introducing asynchronous terminal emulation

The IRMA WorkStation for Windows Async Terminal application enables your PC to share information, computing power, and the resources of other computer systems. It automates the communications process of connecting with an HP or DEC host computer so you can do the following:

● Emulate several DEC terminals, an IBM 3101 terminal, or a TTY terminal

● Transfer files using the most common HP or DEC VT*xxx* terminal file transfer protocols such as X(Y)MODEM and Kermit

● Upload ASCII files from your PC to the host computer as if you were typing at the host's keyboard

● Capture incoming ASCII information from the host computer and save it in a file on your PC

● Capture data to a printer

● Copy and paste data from one application to another

● Perform transparent printing from the VAX

In addition, the Async Terminal application offers the following features:

● A powerful script language, called SISL, to automate repetitive operations

● The capability to customize your window's display image such as font selection, automatic window sizing, and multiple color selections

● Support for the Interrupt 14 Redirector and the NetWare Async Server Interface

Using profiles

You can automate communication with a host computer by setting up a profile for each computer with which you plan to communicate on a regular basis. A profile contains the terminal emulation parameters required for a communications session. By adjusting these parameters, you can instruct the Async Terminal application to operate using methods compatible with the host computer.

This chapter presents guidelines for defining the communications session parameters.

Here's what you do in a typical communication session:

- Start the Async Terminal application.
- Open a profile, and, if necessary, change it.
- Connect with the host computer.
- Upload files or capture data on your PC.
- Transfer files.
- Disconnect from the host computer.
- Save any changes to the profile.

Each activity is explained in the following sections.

Starting asynchronous terminal emulation

To start HP or DEC VT*xxx* terminal emulation, choose the Async Terminal icon from the group window. The Async Terminal action bar, shown in Figure 8-1, is displayed.
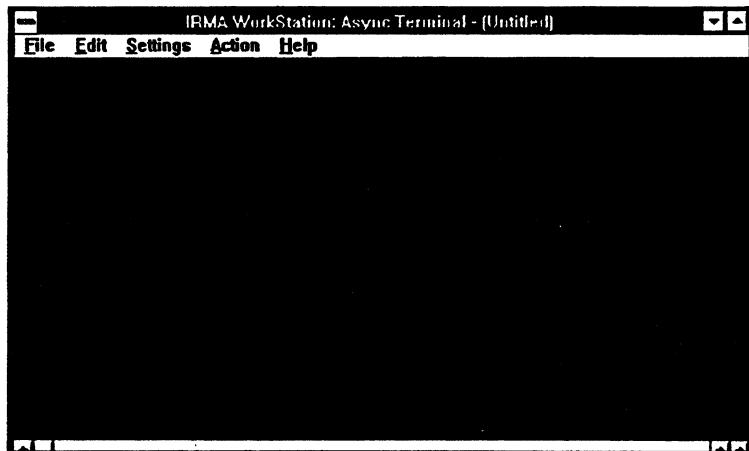
Figure 8-1.   Async Terminal action bar

Table 8-1 describes the action bar pull-downs.

Table 8-1.   Async Terminal pull-downs

Pull-down	Description
File	Lets you create and change terminal emulation profiles, upload a text file to the host computer, capture incoming text from the host computer, initiate file transfers, control printing, and exit the Async Terminal application.
Edit	Provides options to copy text from the screen to the clipboard, paste text to the host from the clipboard, and clear the screen and review buffer.
Settings	Lets you define system, communications, modem, file-upload, screen-capture, terminal-emulator, transfer-protocol, and Window settings.
Action	Provides options to establish a connection with the host, disconnect a communications session, send a break signal to the host, record keystrokes, and run scripts.
Help	Provides on-line assistance. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."

Defining communications session parameters

To establish a connection with another computer, the Async Terminal application needs certain information about your PC and the host computer to which you want to connect. Use the Settings pull-down to access the dialog boxes you should use to define customization parameters.

All of the dialog boxes work in a similar fashion. They display the settings if you are creating a new profile or the currently loaded profile settings if you are modifying an existing profile. You can change the settings as needed.

Table 8-2 explains what options to choose.

Table 8-2. Customization options

To define this...	Do this...
System parameters	Choose System from the Settings pull-down. You can configure such dial-up parameters as the phone number, the connection charge, and the connection type.
Communications parameters	Choose Communications from the Settings pull-down. You can match the parameters for the communications port to those of the host computer. In addition to the standard communications devices supported by the software, you can choose INT14 or NASI as your communications device.
Modem parameters	Choose Modem from the Settings pull-down. DCA provides modem profiles for Hayes® and Hayes-compatible modems. If you need to create a profile for a different modem, use the documentation for that modem or contact your modem manufacturer to obtain the information you need.
Upload parameters	Choose Upload from the Settings pull-down. You can configure the parameters for uploading text to a host computer.
Capture parameters	Choose Capture from the Settings pull-down. You can select the capture mode and specify the carriage-return and line-feed instructions.
Terminal emulation parameters	Choose Terminal Emulation from the Settings pull-down. You can configure the emulation program of your choice.
Transfer protocol parameters	Choose Transfer Protocol from the Settings pull-down. You can select and configure the protocol parameters.
Window parameters	Choose Window from the Settings pull-down. To configure the window parameters, choose one of the options—Font, Colors/Attributes, or Show Status Line.

Connecting and disconnecting a communications session

You can connect with the host computer either directly or through a modem. This section explains how to connect both ways. Before you begin, make sure you know your host system's logon and logoff procedures. Check with your system administrator.

Establishing a direct connection

To connect using a profile with a Local connection type, follow these steps:

1 Choose Connect from the Action pull-down. The connection is made automatically.

2 Log on to the host if the profile you are using does not include a start-up script that performs the logon for you.

Using a modem connection

To connect using a profile with a Call connection type, follow these steps:

1 Choose Connect from the Action pull-down. The modem dials the number based on the profile you are using.

2 If a connection is not made, choose one of the following options:

● Retry, to dial the host's modem again

● Disconnect, to end the dialing process

3 When a connection is made, log on to the host if the profile you are using does not include a start-up script that performs the logon for you.

Disconnecting

The Connect option on the Action pull-down changes depending on the status of a session. If the session is connected, the option shows Disconnect.

To disconnect a session, follow these steps:

1 Log off using the host's logoff procedure.

2 Choose Disconnect from the Action pull-down.

Uploading a file to the host computer

The Async Terminal application provides you with a way to send text files to another computer without using a file transfer protocol. The process is called uploading. Uploading can be used only with ASCII files.

Follow these steps:

1 Choose Upload Text File from the File pull-down. The Upload Text File dialog box is displayed.

2 Specify the file you want to upload.

3 Choose Upload to start the upload.

Note: After selecting Upload File from the File pull-down, the option changes to Stop Upload. ■

Capturing data on your PC

The Async Terminal application provides a way to capture text from another computer. Once you are connected to a host, you can save all the information appearing on your screen to a disk file. Capturing can be used only with ASCII information.

Follow these steps:

1 Choose Start Capture from the File pull-down. The Capture Data to File dialog box is displayed.

2 Specify the file in which to save the data.

3 Choose one of the following pushbuttons:

   ● Append, to append the information to an existing file

   ● Replace, to overwrite an existing file with the information you are re-ceiving

Note: After you choose Start Capture from the File pull-down, the option changes to Stop Capture. ■

Transferring files

This section provides details about transferring files using any of the file transfer protocols available with the Async Terminal application. Before you begin, make sure you know the procedure for executing the appropriate file transfer protocol program on the host. If you need assistance, contact the host system administrator. You also need to know how to connect and disconnect a communications session, which is explained earlier in this chapter.

Sending a file

The procedure for sending a file using either XMODEM (including any XMODEM variant) or Kermit is the same. Follow these steps:

1   Execute either the Kermit or the appropriate XMODEM-type protocol program on the host.

2   Choose Send Using from the File pull-down. (The Send Using option specifies the type of protocol you are using.) The appropriate send-protocol dialog box is displayed.

3   Specify the file you want to transfer.

    Note: If you are using Kermit or YMODEM Batch, wild cards are allowed in the File Name box to send multiple files. ■

4   Choose Send to start the file transfer. A status box appears with information about the file transfer's progress.

Receiving a file

The procedure for receiving a file using XMODEM (including any XMODEM variant) or Kermit varies slightly. Follow the instructions for your choice of file transfer protocol.

Using XMODEM, XMODEM-CRC, or YMODEM

To receive a file using XMODEM, XMODEM-CRC, or YMODEM, follow these steps:

1   Execute the XMODEM, XMODEM-CRC, or YMODEM protocol program on the host.

2   Choose Receive Using from the File pull-down. (The Receive Using option specifies the type of protocol you are using.) The appropriate receive-protocol dialog box is displayed.

3   Specify the file you want to receive.

4   Choose Receive to start receiving the file. A status box provides information about the file transfer's progress.

Using Kermit or
YMODEM Batch

To receive a file using Kermit or YMODEM Batch, follow these steps:

1 Execute the Kermit or YMODEM Batch protocol program on the host.

2 Choose Receive Using from the File pull-down. (The Receive Using option specifies the type of protocol you are using.) The appropriate receive-protocol dialog box is displayed.

3 Choose the directory where the file should be placed. Kermit or YMODEM Batch determines the file name(s).

4 Choose Receive to start receiving the file. A status box provides information about the file transfer's progress.

Stopping a file transfer in progress

To stop a file transfer in progress, choose Send Break from the Action pull-down. This puts the communications hardware in a condition that allows you to restart the transfer process.

Exiting asynchronous terminal emulation

To exit the Async Terminal application, choose Exit from the File pull-down. If you have made changes to the open profile that have not been saved, the program asks whether you want to save the changes before leaving the application.

▼ **Caution:** We recommend that you end terminal emulation before you turn off or reboot your PC to prevent possible host connection problems. ■

Using QuickExec
to Start Applications

The QuickExec utility lets you start multiple applications in a single step. All you have to do is choose the applications you want to start and assign them to an icon. Then, when you are ready to start the applications, simply choose the icon from the group window.

This chapter explains how to use QuickExec to create a list of applications in a profile and assign the profile to an icon. It also explains how to modify the profile once you have it defined. The following topics are discussed:

● Introducing QuickExec

● Starting QuickExec

● Creating and managing profiles

● Exiting QuickExec

This chapter provides brief steps for performing tasks. For a more complete description of dialog boxes and their options, use on-line help.

Introducing QuickExec

QuickExec is a utility that assigns multiple applications to a single profile. After you do this, you add the profile to a group window and use the Quick-Exec icon associated with the profile to start the applications simultaneously. For example, you could assign the display and printer sessions you use every day and a word processing application to a QuickExec profile. When you select the icon associated with the profile from the group window, the applications are started automatically.

Starting QuickExec

To start the QuickExec application, choose the QuickExec icon from the group window. The QuickExec action bar, which is shown with the QuickExec Profile Editor dialog box in Figure 9-1, is displayed.
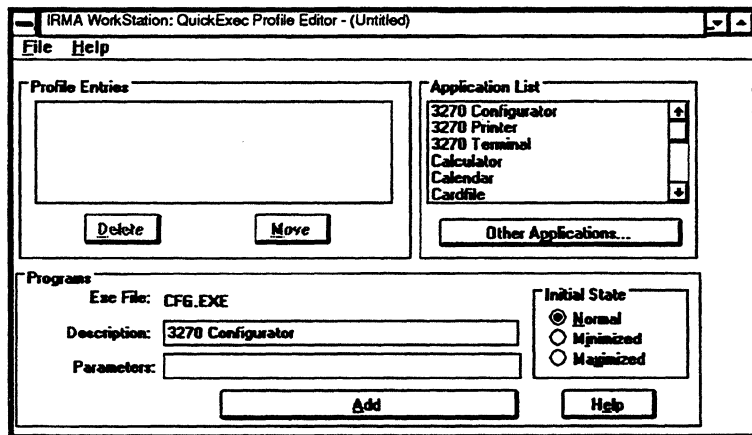
Figure 9-1. QuickExec Profile Editor dialog box and action bar

Table 9-1 describes the action bar pull-downs.

Table 9-1. QuickExec pull-downs

Pull-down	Explanation
File	Lets you create and save profiles, add the profiles to a group window, and exit QuickExec.
Help	Provides on-line assistance. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."

Creating and managing profiles

In this section, you will learn how to define a QuickExec profile and add it to a group window. Included are instructions for the following:

● Creating a new QuickExec profile

● Adding a QuickExec profile to the default group window

● Adding a QuickExec profile to a different group window

● Modifying an existing QuickExec profile

These procedures are explained in the following paragraphs.

Creating a new profile

To create a new QuickExec profile, follow these steps:

1   If the profile in the QuickExec Profile Editor dialog box is undefined (untitled), continue with step 2. Otherwise, choose New from the File pull-down to display an undefined profile.

2   From the QuickExec Profile Editor dialog box, choose an application you want to start automatically from the Application List box and then choose Add to add it to the Profile Entries list box. Note that the applications are executed in the same order as shown in the Profile Entries list box.

3   In the Parameters edit box, specify the necessary application parameters and then choose Replace. Application parameters can include commands you enter at the Windows Run command line. For example, if you add the 3270 Terminal application to your profile list, you can specify the command to start one or more emulation sessions. When you choose the QuickExec icon, the specified emulation session(s) will start automatically.

4   Specify how you want the application to be displayed—Normal, Minimized, or Maximized.

5   Repeat steps 2 through 4 for each application you want to start.

6   If you want to include applications that are not listed in the Application List box, do the following:

● Choose Other Applications. The Other Application dialog box is displayed.

● Specify the name and path of the application and then choose OK. The application is added to the Application List box.

● Add the application to your profile list by following the instructions in steps 2 through 4.

● Repeat this procedure for each additional application you want to include.

Note: To remove applications you have added to the Application List box, use NotePad to edit the USERAPPS.DEF file. Be careful to preserve the order and format of the file. ■

7   If you want to move an application to another position in the Profile Entries list box, choose the entry you want to move and then choose Move. The entry is moved down one position in the list; if it is last, it is moved to the top of the list. Continue moving the entry until it is in the desired location.

8   When you have finished defining the profile, choose Save As from the File pull-down. The Save As dialog box is displayed.

9   Type the profile name in the File Name edit box and choose Save. A confirmation dialog box is displayed.

1 0   Choose OK to confirm your selections. The profile is saved with the name you specify and a .QEP extension.

Figure 9-2 shows a profile that is defined to start two display emulation sessions, a printer emulation session, and the clock. When you choose the icon associated with this profile, the emulation sessions as well as the clock start automatically.
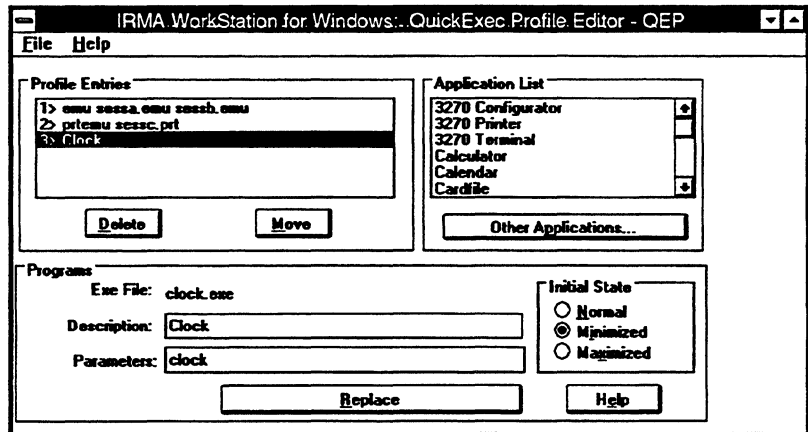
Figure 9-2. QuickExec profile to start display and printer
emulation sessions and the clock

Adding a profile to the default group

To use a QuickExec profile, you must add it to a group window. Follow these steps:

1 Choose Group Box from the File pull-down. The Add Profile to Group Box dialog box is displayed.

2 Choose the .QEP file you created from the Files list box and then choose OK. The Group Box dialog box is displayed.

3 Choose OK to confirm your selection. The profile you created is added to the default group window.

Adding a profile to a different group

If you want to add your QuickExec profile to a group window other than the default, you must do the following:

1 Choose Group Box from the File pull-down. The Add Profile to Group Box dialog box is displayed.

2 Choose the .QEP file you created from the Files list box and then choose OK. The Group Box dialog box is displayed.

3 Choose Other Group. The Specify Name dialog box is displayed.

4 Accept or edit the default group name and then choose OK. The Group Box dialog box is redisplayed.

5 Choose OK to confirm your selection. The profile you created is added to the group window you specified.

Modifying an existing profile

Once you have created a profile, you can modify it to add or delete applications. You can also change the parameters under which the application runs. Follow these steps:

1 Choose Open from the File pull-down. The Open Profile dialog box is displayed.

2 Specify the profile you want to modify and then choose OK. The profile name appears in the title bar of the QuickExec Profile Editor dialog box.

3 Modify the profile by choosing more applications, removing applications, or by specifying different parameters such as a session profile.

If you have more than one application listed, you can choose Move to sequentially move the applications around in the list box.

Note: If you modify an application's parameters in the Programs box, you must choose Replace to make the changes active. ■

4 Choose Save from the File pull-down to save your changes.

Exiting QuickExec

To exit the QuickExec application, choose Exit from the File pull-down. You are prompted to save any unsaved changes before exiting the application.

Recording Scripts with QuickScript

You can automate many of your 3270 or asynchronous terminal emulation activities, such as logging on to the host computer. This chapter explains how to proceed. It covers the following topics:

- Introducing QuickScript

- Why use scripts?

- Recording keystrokes to create simple scripts

- Saving, editing, or discarding your script

- Replaying your script

This chapter provides brief steps for performing tasks. For a more complete description of dialog boxes and their options, use on-line help.
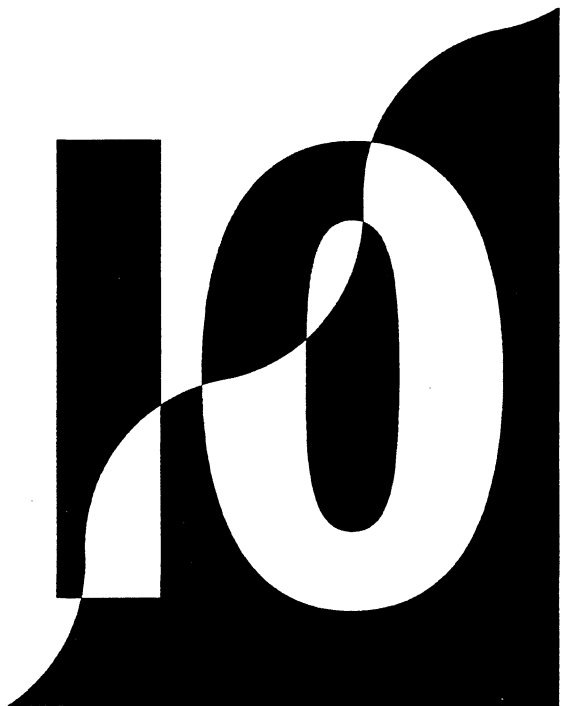
Introducing QuickScript

QuickScript is an application you can use to create and run scripts to perform many of your 3270 emulation activities. For instance, you can run scripts that will activate emulation sessions and log on to a host.

With QuickScript, you can create scripts in either of the following ways:

● Record the keystrokes you enter to complete a communications task.

● Use the script processor to develop, save, compile, and run your scripts.

Recording keystrokes

The easiest way to create a script is to record the keystrokes you enter when performing such tasks as logging on to a host. QuickScript's record facility captures the keystrokes and incorporates them in a script. You can replay the script whenever you need to carry out the task that you recorded.

Using the script processor

You can also create scripts using the script processor. Use the built-in text editor to develop scripts using SISL, and then use the compiler to compile your script source file into executable form. With the script processor, you can create very complex scripts, including those that communicate with other applications using a protocol called Dynamic Data Exchange, or DDE.

The sections that follow explain the purpose and benefits of using scripts as well as provide guidelines for recording, saving, and replaying scripts. To learn how to develop scripts using SISL, refer to the *DCA Script User's Guide*.

Why use scripts?

When you work in a data communications environment, you often have to perform the same functions over and over to complete your daily activities. For instance, each time you start a communications session with the host computer, you have to enter your logon ID and password. You can use scripts to automate your logon as well as many other routine tasks.

To develop applications and utilities that run in a communications environment, you often have to use a complex programming language and an API to access your host. You also have to understand the underlying data communications link. However, when you create a script using QuickScript, you do not have to concern yourself with the details of communications programming; QuickScript handles the communications interface for you. In fact, when you record a script, all you have to do is enter the keystroke sequence for the task you want to automate, save the recorded keystrokes in a script, and then replay the script whenever you need to perform the task again.

The following section explains how to use QuickScript to record your keystrokes.

Recording keystrokes to create simple scripts

You can record keystrokes to create simple scripts that perform routine activities. For example, you can create a script while you are entering your logon ID and password at your terminal.

QuickScript's record facility captures the keystrokes you enter in a sequence of sendkeys statements that are communicated to the host computer. You do not have to write any programming statements; the session connection and communications directives are incorporated for you by QuickScript as part of the completed script. You can see your keystrokes captured and assimilated as sendkeys statements in a text edit window. The window, which runs in the background, mirrors your keystroke entries.

To record a script, simply do the following:

- Start recording keystrokes.
- Enter the data to be transmitted.
- Stop recording keystrokes.

These procedures are explained in the following paragraphs.

Start recording

When you are ready to enter your communications-session logon, or the keystroke sequence for the function you are automating, you can start recording a script. Depending on your communications environment, you begin recording or capturing keystrokes in one of two ways, as explained in the next two sections.

In a 3270 environment

To start recording in a 3270 environment, follow these steps:

1 Start the 3270 Terminal application and activate a session (as explained in Chapter 4, "Conducting 3270 Display Emulation").

2 When you are ready to log on to the host or to perform any function you want to automate, choose QuickScript from the Controls pull-down and then choose Start Record.

3 Enter your keystroke sequence (as explained in the section "Entering Your Data," later in the chapter).

In an asynchronous environment

To start recording in an asynchronous environment, follow these steps:

1 Start the Async Terminal application and connect to the host computer (as explained in Chapter 8, "Using Asynchronous Terminal Emulation").

2 When you are ready to log on to the host or to perform any function you want to automate, choose QuickScript from the Action pull-down and then choose Start Record.

3 Enter your keystroke sequence (as explained in the next section, "Entering Your Data").

Entering your data

To capture your keystrokes in a script, type in the keystroke sequence you normally enter to complete the communications task. The data you enter for your logon, or other communications function, is sent to the host as usual. However, your keystrokes are also captured as sendkeys statements by Quick-Script. You can see this in the QuickScript edit window that runs in the background.

Stop recording

Depending on the communications environment in which you began recording keystrokes, you stop recording them in one of the following ways.

In a 3270 environment

To stop recording in a 3270 environment, choose QuickScript from the Controls pull-down of the 3270 Terminal application and then choose Stop Record.

In an asynchronous environment

To stop recording in an asynchronous environment, choose QuickScript from the Action pull-down of the Async Terminal application and then choose Stop Record.

When you choose Stop Record, you are prompted to save, edit, or discard your script. The next section explains how to perform each task.

Saving, editing, or discarding your script

Once you have recorded your keystrokes and stopped the record facility, a dialog box prompts you to save, edit, or discard your script.

Saving your script

To save your script, follow these steps:

1   Choose Save from the dialog box. The Save As dialog box is displayed.

2   Choose the directory where you want the file to reside.

3   Enter the file name and extension in the File Name edit box.

4   Choose Save. Your data is saved in the specified file.

Editing your script

To modify your script, choose Edit from the dialog box. The QuickScript edit window that was in the background is displayed. You can edit your script in the text edit window.

Discarding your script

To discard your script, choose Discard from the dialog box.

Replaying your script

After you have created and saved your script, you can replay it whenever you have to perform the function you recorded. You can replay a script in one of two ways, as explained in the next section.

Note: For the replay to be successful, the host state must be exactly what it was when you initially started recording your script. If not, you may encounter errors or slow responses from the host while your script is running. ■

In a 3270 environment

To replay a script in a 3270 environment, complete the following steps:

1   If you do not have an active 3270 display session, start the 3270 Terminal application and activate a session (as explained in Chapter 4, "Conducting 3270 Display Emulation").

2   When you are ready to perform your recorded function, choose QuickScript from the Controls pull-down and then choose Run. The Run dialog box is displayed.

3 Choose the directory in which the file resides.

4 Choose the file from the Files list box or enter the file name and extension in the File Name edit box. You can enter the entire path as well as the file name and extension in the File Name edit box.

5 Choose Run.

In an asynchronous environment

To replay a script in an asynchronous environment, complete the following steps:

1 If you do not have an active asynchronous emulation session, start the Async Terminal application and connect to the host computer (as explained in Chapter 8, "Using Asynchronous Terminal Emulation").

2 When you are ready to perform your recorded function, choose Quick Script from the Action pull-down and then choose Run. The Run dialog box is displayed.

3 Choose the directory in which the file resides.

4 Choose the file from the Files list box or enter the file name and extension in the File Name edit box. You can enter the entire path as well as the file name and extension in the File Name edit box.

5 Choose Run.

Using Diagnostics

To monitor and troubleshoot IRMA WorkStation for Windows, you can capture log and trace data in files that you can view at a later time. This chapter explains how to use the Diagnostics application to monitor activity. The following topics are covered:

● Introducing the Diagnostics application

● Starting the Diagnostics application

● Editing log and trace files

● Printing configuration files and profiles

● Using log files

● Using trace files

● Interpreting error messages

● Determining program version numbers

● Exiting the Diagnostics application

This chapter provides brief steps for performing tasks. For a more complete description of dialog boxes and their options, use on-line help.
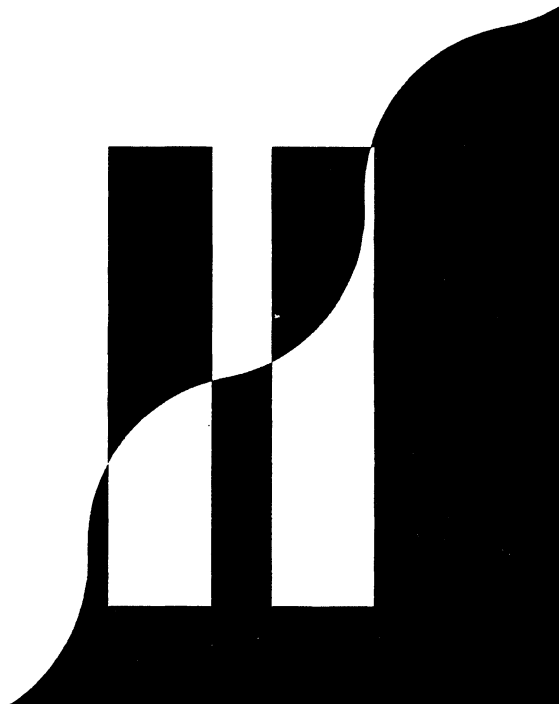
Introducing the Diagnostics application

The Diagnostics application automatically collects diagnostic information that helps you monitor and troubleshoot your data communications. There are two types of diagnostic files:

● Log files, which hold information about significant system-wide events

● Trace files, which trace communications activity across the APPC, CSV, and link interfaces

The Diagnostics application allows you to activate logging or tracing for the current communications session. The Diagnostics application also lets you specify what type of information to collect and how that information can be viewed and printed.

If you are using a TN3270, IRMALAN NETBIOS, or IRMALAN IPX/SPX connection, you can use the Diagnostics utility only to print configuration files and profiles. The logging and tracing features are not supported in these environments.

Note: Only one active log file and one active trace file can capture log and trace information at any time. You can save data from an active diagnostic file into another file for subsequent review. ■

Setting levels of diagnostics files

When you run the Setup program, the software sets up default log and trace information, such as file size and log and trace levels, in the SYSTEM.INI file. With the Diagnostics application, you can override these settings for the current communications session only. The settings you specify using Diagnostics remain in effect until all IRMA WorkStation for Windows applications have terminated. The next time you start a communications session, the SYSTEM.INI settings are restored.

You can also change some parameters through the 3270 Configurator application. Refer to Chapter 3, "Configuring for 3270 Emulation," for more information. The configuration entries you make are written to the SYSTEM.INI file and are in effect each time you start an IRMA Work-Station for Windows application.

To make permanent changes to other SYSTEM.INI parameters, you must enter them directly into the SYSTEM.INI file. For details on SYSTEM.INI parameters, refer to Appendix D, "SYSTEM.INI Parameters." Check with your system administrator before changing entries in this file.

Displaying and printing log and trace data

The Diagnostics application lets you display or print active log and trace files. You can customize the file output as follows:

- Display or print messages based on selection criteria such as the severity level or the inclusion of a specified character string embedded in message text

- Choose which message header fields to display or print by filtering out the date, the time, and the severity level of the message

- Display or print a separate line for each header

- Display or print all messages that have been logged since you started a session and opened the file for viewing or printing

Starting the Diagnostics application

To start the Diagnostics application, choose the Diagnostics icon from the group window. The Diagnostics action bar, shown in Figure 11-1, is displayed.

File   Edit   Trace   Log   Settings   Utilities   Help
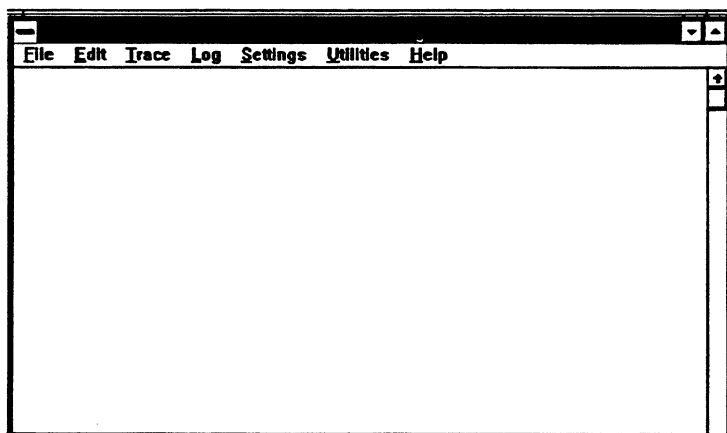
Figure 11-1.   Diagnostics action bar

Table 11-1 describes the action bar pull-downs.

Table 11-1.   Diagnostics pull-downs

Pull-down	Description
File	Provides options to open and print log and trace files and to exit the Diagnostics application.
Edit	Lets you save portions of a log or trace file to the clipboard.
Trace	Provides options to set the trace type, specify the message tracing level, and start a trace on any IRMA WorkStation for Windows application.
Log	Lets you set log types, start a logging session, and clear the log file.
Settings	Provides options to customize your screen display and printed reports.
Utilities	Lets you print the configuration file as well as the profiles for 3270 display and printer emulation, file transfers, and HP or DEC terminal emulation.
Help	Provides on-line assistance. For more information, see Chapter 1, "Introducing IRMA WorkStation for Windows."

Editing log and trace files

You can use the Edit pull-down to copy all or portions of a log or trace file to the clipboard. You can then retrieve the data from the clipboard and save it in another file by using an application, such as a text editor, that supports clipboard retrieval.

To copy file data to the clipboard, complete the following steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Specify the file type and file name and then choose Open.

3   In the displayed file, highlight the information you want to copy.

4   Choose Copy from the Edit pull-down. The information is copied to the clipboard.

Printing configuration files and profiles

You can print the configuration file as well as profiles for the 3270 Terminal, 3270 Printer, File Transfer, and Async Terminal applications. Follow these steps to print a configuration file or profile:

1   Choose Print Config Files from the Utilities pull-down. The Config File Type dialog box is displayed.

2   Specify the file type and file name.

3   Choose OK to print the file.

Using log files

The system log provides information about diagnostics and internal operations. In this section, you will find information on opening the system log file, activating the log, customizing log output, viewing and printing logs, and resetting the log file.

Opening the log file

If you want to review log information, copy file data to the clipboard, customize file output, or print a report, you must open the log file.

To open the log file, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Specify the file type and file name.

3   Choose Open to display the file.

Activating the log

When you activate logging, you specify a message severity logging level that determines which audit and error messages are placed in the log file. The IRMA WorkStation for Windows software captures all messages at the specified severity level and higher.

The following paragraphs explain the message severity levels and provide instructions for setting the logging level and activating the log.

Understanding message severity levels

Message severity levels are explained in Table 11-2. Log message levels 6 through 10 are audit messages; levels 12 and 16 are error messages.

Table 11-2.   Log message severity levels

Level	Explanation
6	Detailed audit information.
8	User and data link audit level, covering such events as user log-on, APPC TP program start/end, and connection establishment.
10	Significant system events. These include events such as starting a network service, or successfully updating a configuration file.
12	Warnings/Recoverable errors. Level 12 errors will adversely affect the operation of an IRMA WorkStation for Windows component, but will not cause its termination.
16	Fatal errors. A level 16 error will cause termination of an IRMA WorkStation for Windows component.

The initial program default, set during installation, is Warnings/Recoverable Errors. This specifies that error messages at levels 12 and 16 are logged to the system log file or to screen pop-ups if there is no log file set up.

Setting the logging level

To set the logging level, follow these steps:

1   Choose Set System Log Levels from the Log pull-down. The Set System Log Levels dialog box is displayed.

2   Specify the appropriate logging level.

3   Choose OK to activate logging.

Customizing log output

Your log file contains all of the information captured during the logging process. You may not want to view all of this data. For example, you may need to generate a customized report containing only the 3270 messages. You can tailor your display or printout to include just the information you need from the file.

Customizing diagnostic reports allows you to efficiently review and use the information stored in a log file. You can specify the fields to display and the types of records to view using the Settings pull-down options.

You must open a log file before you can customize the output. See "Opening Log Files" earlier in this chapter for information on this procedure.

Displaying selected fields

To specify the fields to include in your report, follow these steps:

1   Choose Field Display from the Settings pull-down. The Log File Display Options dialog box is displayed.

2   Choose one or more field display options.

3   Choose OK to display the fields.

Your log file display is formatted according to the options you select. These options become the new defaults and remain in effect until you change them. If you need to generate reports containing different fields, you must establish new field display parameters.

Viewing specific records

To specify the types of log records to display or print, follow these steps:

1   Choose Record Filter from the Settings pull-down. The Log File Filter Options dialog box is displayed.

2   Choose the specific kind of messages you want in your report.

3   Choose OK to view the records.

Your log file display is formatted according to the options you select. These options become the new defaults and remain in effect until you change them. If you need to generate reports containing different types of log records, you must establish new record filter parameters.

Viewing and printing logs

To monitor and troubleshoot IRMA WorkStation for Windows, you will want to view or print your log file. To perform either task, you must open the file you want to see. Refer to the section "Opening Log Files" earlier in this chapter for a description of this process.

When you open a log file, its contents appear on the screen. The file you are viewing remains open until you open another file or exit the Diagnostics application. To examine the file's contents, use either the mouse and selection bar, or the cursor, PgUp, PgDn, Home, and End keys.

To obtain a paper copy of the displayed log file, choose Print from the File pull-down. The file's contents are directed to the printer.

Clearing the log file

After a time, information in your log file becomes outdated. The size of the file continues to grow as new data is appended to old information. The log file stores up to 250 KB of data at a time; it then deletes all information in the file and starts saving new messages up to the 250 KB limit. (You can adjust the 250 KB limit by changing the COMLOGL entry in the SYSTEM.INI file. Refer to Appendix D, "SYSTEM.INI Parameters," for details.)

You can manage the log file's contents by clearing it when you no longer need the currently stored information. This is especially important if you want to conserve disk space. When you clear the file, you can save the current contents under a different name or discard them.

To clear the log file, follow these steps:

1   Choose Reset System Log from the Log pull-down. The Reset System Log dialog box is displayed.

2   If you want to save the log file contents before clearing the file, specify a backup file name.

3   Choose OK to clear the file.

Using trace files

A trace file contains information about communications sessions between the workstation and the host. Messages are captured in this file by the SNA communications facility.

This section provides guidelines for opening trace files, starting a trace, customizing trace output, viewing and printing trace information, and resetting the trace file.

Opening trace files

If you want to review trace information, copy file data to the clipboard, customize file output, or print a trace report, you must open the trace file.

To open the trace file, follow these steps:

1   Choose Open from the File pull-down. The Open dialog box is displayed.

2   Specify the file type and file name.

3   Choose Open to display the file.

Starting a trace

Tracing is activated when you specify a trace level and start the trace. You must set the trace level before you activate tracing because the initial default, set during installation, disables all tracing. The information that is captured by the SNA communications trace facility is determined by the trace level you select. The setting you specify is effective immediately and remains in effect while the communications session is active.

If you want to capture specific trace message types such as DLC, APPC, or CSV messages, you can choose the Extended Message Setting option from the list of trace levels. Choosing this option enables you to selectively specify any combination of tracing types that you would find useful for adminis-trative or debugging purposes.

Note: Tracing slows response time; therefore, do not run tracing unnecessarily. The information you obtain, however, is often invaluable in determining the cause of problems. ■

The following paragraphs explain how to set trace levels and types and start a trace.

Setting trace levels

To specify the message tracing level, follow these steps:

1 Choose Set Trace Levels from the Trace pull-down. The Set Trace Levels dialog box is displayed.

2 Specify the appropriate trace message level.

3 Choose one of the following pushbuttons:

● OK, if you selected any trace level other than Extended Message Setting. The trace is activated.

● Extended, if you selected Extended Message Setting. The Set Trace Types dialog box is displayed. The following section explains how to use this dialog box.

If there is no active application, a message box prompts you to start one.

Setting trace types

To set specific trace types, follow these steps:

1 From the Set Trace Types dialog box, choose the types of messages you want to capture.

2 Choose Set Trace to start the trace.

Customizing trace output

Your trace file contains all of the information captured during the tracing process. You may not want to view all of this data. For example, you may need to generate a customized report containing only APPC trace messages. You can tailor your display or printout to include just the information you need from the trace file.

You must open the trace file before you can customize the trace output. See "Opening Trace Files" earlier in this chapter for information on this procedure.

Displaying selected fields

To specify the fields to include in your report, follow these steps:

1   Choose Field Display from the Settings pull-down. The Trace File Display Options dialog box is displayed.

2   Specify one or more field display options.

3   Choose OK to display the fields.

The trace file output is formatted according to the options you select. These options become the new defaults and remain in effect until you change them. If you need to generate reports that include other message fields, you must establish new field display parameters.

Viewing specific records

To specify the type of trace records to display or print, follow these steps:

1   Choose Record Filter from the Settings pull-down. The Trace File Filter Options dialog box is displayed.

2   Specify the specific types of messages you want in your report.

3   Choose OK to view the records.

Your trace file display is formatted according to the options you select. The options become the new defaults and remain in effect until you change them. If you need to generate reports that contain different trace types, you must establish new record filter parameters.

Viewing and printing traces

To monitor and troubleshoot the software, you will want to view or print the trace file. To perform either task, you must open the file you want to see. Refer to the section "Opening Trace Files" earlier in this chapter for a description of this process.

When you open the trace file, its contents appear on the screen. The file you are viewing remains open until you open another file or exit the Diagnostics application. The display includes information that is stored in the trace file from the time a trace is enabled until the application being traced is no longer active. To examine the contents of the file, use either the mouse and selection bar, or the cursor, PgUp, PgDn, Home, and End keys.

To obtain a paper copy of the displayed trace file, choose Print from the File pull-down. The contents of the file are directed to the printer.

Resetting the trace file

If you want to reset the trace file to save trace data for review, you can use the Windows File Manager. Use the Rename File option on the File pull-down to rename the default trace file. You must then reenter the name of the trace file in the SYSTEM.INI file as documented in Appendix D, "SYSTEM.INI Parameters." Refer to the Windows documentation and check with your system administrator before altering the SYSTEM.INI file.

Interpreting error messages

An explanation of error messages is available through the 3270 Terminal on-line help. When a message appears in a message box, you can choose Help for further information. The following information describes how to interpret this information.

Explanation of system log messages

The components of messages are described in the following paragraphs. The description of each element of a message is based on an actual message, shown in the following example:

COM0210 E *Subcode*   Failed to get required memory resources
Severity 16.

Message format

The message format, illustrated in the foregoing example, is as follows:

COM*nnnn* X x"nnnn"   Message text *Variables*
Severity level.

COM0210	Message number
E	Message code type
Subcode	Hexadecimal internal identifier
Failed to...	Message text
Variables	Additional technical information such as time, location, or further identification Note that there are no variables in the message example.
Severity 16	Message severity level

Message code type

The message code type can be one of the letters shown in Table 11-3.

Table 11-3.   Message code types

Code	Explanation
I	Information/audit message (levels 6, 8, and 10)
W	Warning message (level 12)
E	Critical error (level 16)

Subcode

Some messages include a subcode in the following format: COM*nnnn X (x'nnnn')*, where (x'nnnn') is the subcode. A subcode is an internal identifier for the point at which the error occurred within the software. This is indicated by the *(subcode)* placeholder in the message descriptions. Values for these subcodes are shown in hexadecimal representation and may contain from 1 to 4 digits. When more than one subcode is associated with a message, the values and meanings of the subcodes are listed. When the subcode has one value, the hexadecimal format is shown with no additional information.

Variables

When the message text includes variable data, the position of the data in the message text is indicated by a placeholder in italics. The data may be a parameter such as an LU name or user identification (ID), or a return code giving the reason for the error (in which case the possible values are listed with more specific actions). Here is an example:

Session Activation Failure, SENSE = *sensecode*.

Some message texts also include the return code from a DOS or Windows call.

Most error messages contain one or more variables. Table 11-4 lists the variables in alphabetical order with a brief explanation of their meaning.

Table 11-4. Error message variables

Variable	Explanation
action	The action required to start or restart a service
alias	The LU alias
applname	The host application name
checkcode	The line check code
command	The command entered
code1, code2	Additional information about the message
configuration filename	The configuration file name
conname	The connection name
convid	The conversation ID
desttpname	The destination transaction program name
errcode	The error code
failurecode	The failure code
filename	The file name
helpid	The help text ID in the help file
hh	The frame status value
lfsid	The local form session identifier
linkname	The link service name
list of session names	A list of 3270 emulation sessions
luname	The local LU name
luaddr	The LU address
lualias	The LU alias
luname	The LU name
modename	The mode name
nn	A number; the number of *ns* = the number of digits
number	The number required to start a connection
opentype	An invalid internal OPEN message
parameter string	The parameter string name
partneralias	The partner LU alias
pkttype	The packet type
plu alias	The partner LU alias
printername	The printer name
procedurename	The procedure name
prodid	The product ID
programname	The program name
prtnralias	The partner LU alias
qual	An error qualifier
remNUA	The remote NUA
returncode	The return code

Table 11-4. Error message variables (cont.)

Variable	Explanation
rluname	The remote LU name
sensecode	The sense code
sensedata	Sense data
servicename	The service name
servicetype	The service type
sessid	The session ID
sessionname	The session name
srctpname	The source transaction program name
stationaddress	The station address
string	A hexadecimal string representing the host file transfer program name in EBCDIC
time	The time within which a connection must be started
tpid	The transaction program ID
tpname	The APPC transaction program name
userdata	User data
userid	The user ID
-+z_nnn	The communications reminder code

Severity levels

Severity levels are listed for logged messages and screen page pop-ups, as in this example:

SNA protocol violation.
Severity 12.

Severity levels are explained in the section "Activating the Log" earlier in this chapter.

Determining program version numbers

IRMA WorkStation for Windows provides a way for you to check which version of IRMA WorkStation for Windows Comm Engine you are running. The Comm Engine is internal software that allows the PC to communicate with the host.

To determine the version number, follow these steps:

1   Activate a session.

2   Select the Comm Engine icon.

3   Choose the About option. The version number is displayed.

To disable the display of the Comm Engine icon, change the CommEngine-Icon parameter in the WIN.INI file to NO. For IRMALAN NETBIOS, IRMALAN IPX/SPX, and TN3270 connections, set the ShowIcon parameter to 0 (zero).

Exiting the Diagnostics application

To leave the Diagnostics application, choose Exit from the File pull-down.

Status Line Messages

During a 3270 session, the status line at the bottom of your screen contains messages about the current session. The status messages are grouped into the following categories, which are explained in this appendix:

● Readiness and System Connection

● Session Reserved

● Do Not Enter

● Communications Reminder

● Mode Status (NUM)

● SPX Return Codes

● Insert

● Printer Status

● Gateway Name/LU Number/Session Status

● Session Name

● Cursor Position

● Session
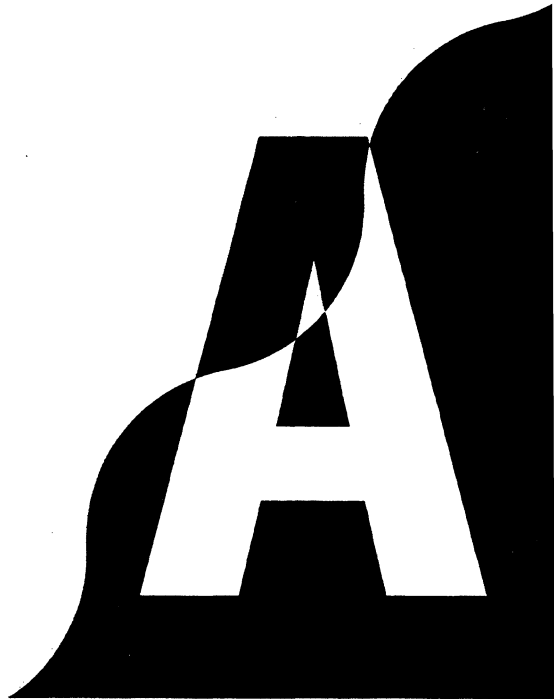
The 3270 status line

During a 3270 session, the bottom of your screen becomes the status line, which is an information area that presents messages about the current session. Not all of the following messages may apply to your use of the program. The status line is shown in Figure A-1.
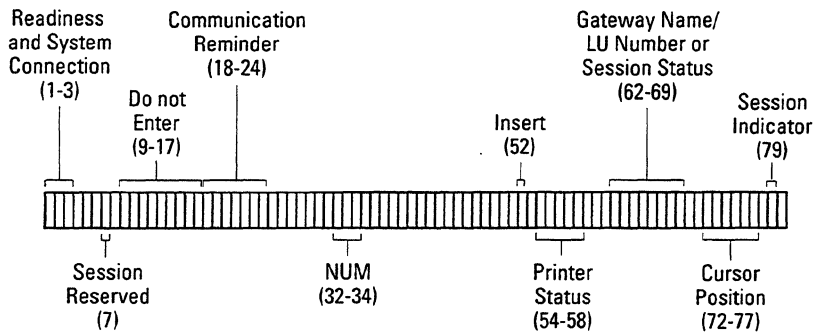
Figure A-1.   3270 status line

The symbols in this appendix appear on your status line if you are using a DCA font. Otherwise, the symbols may be different.

Readiness and System Connection messages

The Readiness and System Connection messages tell whether your computer and the host system are ready. These messages appear in columns 1–3.

Readiness and System Connection messages are explained in Table A-1.

Table A-1.   Readiness and System Connection messages

Symbol	Meaning
S, 4, or N*	The emulator is connected to a 3174, 3274, or integrated control unit, such as a 9370, respectively.
6*	The emulator is connected to a 3276 control unit.
B*	The emulator is on line and connected to an SNA host.
A	The emulator is on line and connected to a non-SNA host. This message is displayed in TN3270 environments only.
My Job ■	The emulator is communicating with a host application program.
System Operator* ☒	Your emulator is communicating with the network control program rather than an application program.
Unowned* ?	The emulator is running but is not communicating with a host application program or the network control program.

* This message is not displayed in TN3270 environments.

Note: If you are using an IRMALAN IPX/SPX or IRMALAN NETBIOS connection, the LU status is displayed once the gateway connection is established. When a ready symbol of 4, 6, or S appears at the far left of the status line, the gateway is connected to or is acting as a 31*xx*, 32*xx*, or 37*xx* control unit, and the IRMA WorkStation for Windows software is activated. ■

Session Reserved indicator

Column 7 displays an asterisk (*) if the current session has been reserved for a session using HLLAPI. The Session Reserved message notifies you that an application has reserved the host session for access. When this is displayed, the application has control of the keyboard for that session.

See the *DCA HLLAPI Programmer's Guide*, available in the optional DCA HLLAPPI Software Developer's Tool Kit, for information on developing and running HLLAPI applications with IRMA WorkStation for Windows.

Do Not Enter messages

When a Do Not Enter message appears, your keyboard is disabled temporarily. The emulator ignores most keys. Do Not Enter messages appear in columns 9–17.

The message indicates why the keyboard is disabled, as shown in Table A-2. You must wait until the Do Not Enter message disappears before you press more keys. In some cases you can clear this message by pressing (Reset).

Table A-2. Do Not Enter messages

Symbol	Meaning
System Lock **X SYSTEM**	The application program on the host has replied to the last message sent from the PC and is requesting the PC to send the next message; however, the host has not unlocked the keyboard. Press (Reset).
What? **X ?+**	The emulator did not accept part or all of your last operation. For example, you may have tried to enter data while one of the other Do Not Enter messages was displayed. Press (Reset); then try the operation again.
Go Elsewhere **X ◄[ ]►**	You tried an operation in an incorrect location. For example, you may have tried to enter data in a protected field. Press (Reset); then move the cursor before entering data, or perform a different operation.
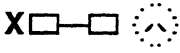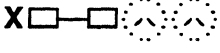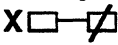
Table A-2. Do Not Enter messages (cont.)

Symbol	Meaning
Machine Check **X** ⊘ **nnn**	If one of these messages appears, the emulation program is halted. Make a note of the 3-digit error code (represented by *nnn*), and report the problem to the system administrator.
Wait **X** ⟨⟩	The host needs more time to complete your task.
Too Much Data **X** 🔲 **>**	You tried to enter more data into a field than the field could hold. Press ⟨Reset⟩, and correct the entry.
Minus function **X -f**	You tried to perform an operation that is not available. Press ⟨Reset⟩ to unlock your keyboard.
Invalid Dead Key **X** 🔲 ´ **+ ?** **X** 🔲 ` **+ ?** **X** 🔲 ^ **+ ?** **X** 🔲 ¨**+ ?** **X** 🔲 ~ **+ ?** **X** 🔲 ,**+ ?** **X** 🔲 ° **+ ?**	You used an invalid Dead Key combination. Press ⟨Reset⟩.
Numeric Field **X** 🔲 **NUM**	You tried to enter non-numeric characters into a numeric field. Press ⟨Reset⟩. Then enter numeric data or move to another field.
Operator Not Authorized **X** 🔲 **X**	You tried to use a printer-related function in a session not associated with your printer. Press ⟨Reset⟩ to unlock your keyboard.
Program Check **X PROGnnn**	Program error *nnn* occurred. Reset the keyboard.

Table A-2. Do Not Enter messages (cont.)

Symbol	Meaning
Printer Busy* X▢—▢ ⟨⟩	Your printer is starting to print. This message may appear for only a brief time before printing begins, while data is being transferred to the print buffer. If the message does not clear quickly, and you want to cancel printing, press ⟦Dev⟧⟦Cncl⟧. The ⟦Reset⟧ key does not unlock the keyboard when this message appears.
Printer Very Busy* X▢—▢ ⟨⟩⟨⟩	Your printer is printing data from the host. Your local print request is queued and will be printed after the host data is printed. If the message does not clear quickly, and you want to cancel printing, press ⟦Dev⟧⟦Cncl⟧. The ⟦Reset⟧ key does not unlock the keyboard when this message appears.
Printer Not Working* X▢—⌿	Your print request was canceled because the printer attached to your computer is not working. It may be out of order, unplugged, or out of paper. If you initiated the print operation with the Print key, press the ⟦Dev⟧⟦Cncl⟧ key sequence to unlock your keyboard. You can restart the operation after you fix the printer problem. If the host initiated the print operation, it may restart after you press ⟦Dev⟧⟦Cncl⟧. Therefore, you should fix the printer problem before pressing ⟦Dev⟧⟦Cncl⟧. The ⟦Reset⟧ key does not unlock the keyboard when this message is displayed.

* This message is not displayed in TN3270, IRMALAN NETBIOS, and IRMALAN IPX/SPX environments.

Communications Reminder messages

Communications Reminder messages indicate the status of your communications link with the host. They appear in columns 18–24. The Communications Reminder messages are briefly explained in Table A-3.

Note: Communications Reminder messages are not supported in TN3270 environments. ■

Table A-3.   Communications Reminder messages

Symbol	Meaning
Link Service Inactive -+z_500	All the link services configured for use by the connection are inactive.
Link Failure -+z_501	The link from your PC to the host has failed. This message remains until the communication link is restored. If you try to use any of the function keys, the Minus Function message appears and your keyboard locks. Press Reset to unlock the keyboard.
Transmit Data Interrupt -+z_502	A problem occurred in the link between the host and the PC while data was being transmitted. Report the message to your system administrator.
Link Not Established -+z_504	The PC is not communicating with the host. This message disappears when the link is established with the host.
Connection Terminated by Host -+z_505	The host terminated the connection used by your 3270 session.
Controller Deactivated -+z_510	The physical unit is not active. Report the error to your system administrator if it does not disappear in a short time.
No Polls Received -+z_520	The PC is not being polled by the host. Note the error code number and report it to your system administrator.

Table A-3. Communications Reminder messages (cont.)

Symbol	Meaning
No Flags Received -+z_521	The modem is functioning, but the host is not sending data. Note the error code number and report it to your system administrator.
Controller Problem -+z_525 ·	A connection problem prevents establishing or reestablishing host communications. Check the error log for the specific cause.
Connection Failure . -+z_530	The connection between the controller and the host is down. Check the error log for a specific cause. Then check your controller's documentation for recovery suggestions.
QDISC Received -+z_539	The connection has been lost due to receipt of a QDISC command from the host.
Call failed to connect -+z_582	An attempt to connect to the host through a switched virtual circuit has failed.
Disconnect received +z_590	All of your emulation sessions were lost or were not established at the communications server you specified during configuration. You can wait for the sessions to recover, or try to activate the session again. Once the server comes back up, your sessions will be recovered.
Unable to initialize +z_592	An attempt to connect to the server you specified during configuration has failed. Try specifying a different server name in the NetWare for SAA Communications Server Attachment dialog box. If the message still appears, configure the session again using the 3270 Configurator.
Unable to initialize—NetWare for SAA session is unavailable +z_593	An attempt to find an LU that matches the configured session parameters has failed. Try specifying different parameters in the NetWare for SAA Communications Server Attachment dialog box. If the message still appears, configure the session again using the 3270 Configurator.
SABME received on token-ring connection -+z_655	The token-ring connection to the host has been deactivated because the host sent a SABME command.

Table A-3.   Communications Reminder messages   (cont.)

Symbol	Meaning
FRMR sent on token-ring connection -+z_656	The token-ring connection to the host has been deactivated because the host sent a frame containing an error.
FRMR received on token-ring connection -+z_657	The token-ring connection to the host has been deactivated because the host sent a frame-reject (FRMR) command.
Token-ring connection terminated by host -+z_658	The host has deactivated the token-ring connection.
Token-ring connection lost -+z_659	The token-ring connection to the host has been lost.
Link Failure -+z_900	IRMA WorkStation for Windows was not able to connect to the gateway. Check to see that the gateway is active, and be sure that the same gateway name was used during gateway configuration and workstation configuration. If the problem persists, contact your LAN administrator.
Connection in Progress -+z_901 through -+z_905	IRMA WorkStation for Windows is in the process of connecting to the gateway. The connection process is performed in several stages indicated by 01 to 05. These status messages should only appear briefly. If the status line displays this code for more than a brief period of time, terminate and restart the software. If the problem still exists, contact DCA Technical Support.
Disconnect in Progress -+z_906 through -+z_909 or -+z_90B	IRMA WorkStation for Windows is in the process of disconnecting from the gateway.

Table A-3. Communications Reminder messages (cont.)

Symbol	Meaning
Disconnect Pending -+z_907	A disconnect request is waiting to be sent. This message should appear only briefly. If the status line displays this code for more than a brief period of time, terminate and restart the software. If the problem still exists, see your system administrator.
Disconnect Sent -+z_908	A disconnect request was sent. This message should appear only briefly. If the status line displays this code for more than a brief period of time, terminate and restart the software. If the problem still exists, see your system administrator.
Waiting for Disconnect Response -+z_90B	IRMA WorkStation for Windows sent a disconnect to the gateway and is waiting for a response so that it can complete the disconnection process. This message can appear for more than a brief period of time depending on the action at the time of the disconnection.
Waiting for Disconnect Response -+z_90B (cont.)	In some cases, the gateway does not send IRMA WorkStation a response to a disconnect request until appropriate cleanup is done with the host system. If this message does not change for a long period of time, terminate and restart the software. If the problem still exists, see your system administrator.
OffLine -+z_944	IRMA WorkStation for Windows is off line. Press the On-line Toggle key Ctrl PgUp to restart a gateway connection.
Abnormal LAN Terminate -+z_C18 or -+z_D18	(IRMALAN NETBIOS connection only). Your LAN session was abnormally terminated. If this error persists, try starting the gateway with the -z command line option.
Workstation Hang Up Error -+z_A00	This error occurred when a NETBIOS HANGUP command was issued. Terminate and restart the software. If this code appears often in the status line, contact your system administrator.
Workstation CANCEL Error -+z_A01	This error occurred when a NETBIOS CANCEL command was issued. Terminate and restart the software. If this code appears often in the status line, contact your system administrator.

continued

Table A-3.   Communications Reminder messages   (cont.)

Symbol	Meaning
Workstation Call Error -+z_B*xx*	NETBIOS sent error *xx* to IRMA WorkStation when a CALL command was issued. Refer to the NETBIOS documentation for the error code and corrective action.
Workstation Send Error --+z_C*xx*	NETBIOS sent error *xx* to IRMA WorkStation when a SEND command was issued. Refer to the NETBIOS documentation for the error code and corrective action.
Workstation Receive Error -+z_D*xx*	NETBIOS sent error *xx* to IRMA WorkStation when a RECEIVE command was issued. Refer to the NETBIOS documentation for the error code and corrective action.
LAN/Gateway Error -+z_E*xx*	IRMA WorkStation detected an error condition that it believes to be a LAN or gateway problem. The possible values for *xx* are as follows:

00   No error.
01   IRMA WorkStation received a message with a bad length.
02   IRMA WorkStation received a bad message type.
03   The gateway is not an SNA gateway.
04   The gateway and workstation versions are incompatible.
05   The gateway sent data for an LU that is not currently in use by the workstation.

Contact your LAN administrator.

| LAN/Client Error -+z_F*xx* | The gateway experienced an error that it believes to be a LAN or workstation problem. The possible values for *xx* are as follows: |

00   No error.
01   The gateway received a message with a bad length.
02   The gateway received a bad message type.
04   The workstation and gateway versions are incompatible.
05   The gateway received a bad user ID.
06   The gateway received a bad password.

Table A-3. Communications Reminder messages (cont.)

Symbol	Meaning	
LAN/Client	07	The workstation requested too many LUs.
Error	08	The workstation requested the wrong type
-+z_Fxx		of LU.
(cont.)	09	The workstation configuration does not match gateway configuration.
	0c	The maximum workstation count at the gateway was exceeded. For example, there are no available sessions at the gateway.
	10	Workstation access is not allowed.
	11	No LUs are allocated for this workstation.
	Contact your LAN administrator.	

Mode Status (NUM) messages

Mode Status messages indicate the current mode of operation. They include NUM (32–34), which indicates that the cursor is in a numeric field.

SPX Return Codes (IRMALAN IPX/SPX and NetWare for SAA)

The SPX return codes listed in Tables A-4 and A-5 can appear in several ways. They can be included as the last 2 digits of a Communications Reminder message on the status line or internal error code. They can also be reported as a return code or a completion code in a message. Table A-4 describes Call errors (-+z_Bxx) and Send errors (-+z_Cxx).

Table A-4. SPX return codes on SEND and CALL

Code	Description
00	The transmission was successful.
15	No ECBs were available for this packet. If this causes problems, see your LAN administrator.

continued

Table A-4. SPX return codes on SEND and CALL (cont.)

Code	Description
EC	The connection partner terminated the connection. Verify that the connection partner is functioning and accessible. On a CALL, verify that the gateway name or address is specified correctly.
ED	The SEND failed because the target either did not answer or answered negatively. Verify that the connection partner is functioning and accessible. On a CALL, verify that the gateway name or address is specified correctly.
EE	The connection ID is invalid. If this causes problems, see your LAN administrator. Otherwise, ignore this message.
EF	The SPX connection table is full. SPX must be configured to provide more connections. Add the line SPX CONNECTIONS=n to the SHELL.CFG file, where n is the number of connections needed. The default is 15. Restart the PC and start IPX with the updated SHELL.CFG file.
FC	The command was canceled. This is an internal error. See your LAN administrator.
FD	Malformed packet. This is an internal error. See your LAN administrator.
FF	Socket not open. This is an internal error. See your LAN administrator.

Table A-5 describes return codes that are displayed with Receive errors (+z_Dxx).

Table A-5. SPX return codes on RECEIVE

Code	Description
00	The file was received successfully.
15	No ECBs were available for this packet. If this causes problems, see your LAN administrator.

continued

Table A-5. SPX return codes on RECEIVE (cont.)

Code	Description
ED	The connection has terminated. If this causes problems, see your LAN administrator.
EF	The SPX connection table is full. SPX must be configured to provide more connections. Add the line SPX CONNECTIONS=n to the SHELL.CFG file, where n is the number of connections needed. The default is 15. Restart the PC and start IPX with the updated SHELL.CFG file.
FC	The command was canceled. If this causes problems, see your LAN administrator.
FD	Packet overflow. If this causes problems, see your LAN administrator.
FF	Socket not open. This is an internal error. See your LAN administrator.

Insert symbol

When your keyboard is in Insert mode, the caret symbol (^) is displayed on the status line of your display in column 52. When you enter characters under Insert mode, they are inserted within the current display. When Insert mode is disabled, characters entered from the keyboard overwrite data to the right of the cursor on the display. Press the (Reset) key to exit Insert mode.

Printer Status messages

Printer Status messages tell you if your printer is turned on, when it is printing, what your output device is, and when it fails during a print operation. They appear in columns 60–64 for a CUT session and in columns 54–58 for non-CUT sessions.

Note: Printer Status messages are not supported in TN3270, IRMALAN IPX/SPX, or IRMALAN NETBIOS connections. ■

Table A-6 describes the Printer Status messages.

Table A-6. Printer Status messages

Symbol	Meaning
Printer Assigned □—□ 01–98	The printer connected to the specified host port is ready to print. Local copies are directed to the host port device.
□—□ 99	Your printer is ready to print. The special value 99 directs local copies to the printer attached to the PC.
Printer Printing □—■ XX	The printer is printing your job.
Printer Failure □—◣ XX	The printer is not ready to print. It may be off line, out of paper, or turned off. The printer control panel may be on hold.

Gateway Name/LU Number/Session Status messages

The Gateway Name/LU Number/Session Status messages identify the IRMA-LAN/*EP* gateway to which IRMA WorkStation for Windows is connected and the LU number that is assigned for the session. If you are using a TN3270 connection, this field shows the connection status of a TN3270 session.

Note: LU Number messages are not supported in TN3270 environments. ■

If you are using an IRMALAN NETBIOS or IRMALAN IPX/SPX connection, note the following:

● When the software is attempting to find a gateway connection, this area is blank.

● If the Gateway Search Count value specified during configuration is reached and the software fails to find a gateway connection, the message OFFLINE appears in this area. Press the Online/Offline toggle key ((Ctrl) (PgUp)) to restart the gateway search process.

● If you use the Online/Offline toggle key after a connection is made, the message OFFLINE appears in this area. The message disappears when you reestablish a gateway connection.

If you are using a TN3270 connection, note the following:

● The message ATTEMPT appears in this area on the status line until a connection is established with the host.

● The message OFFLINE appears in this area if the host has disconnected the session abnormally, or if the host connection could not be established. Pressing the Online/Offline toggle key ([Ctrl] [PgUp]) causes the Session Status message to change.

Once the gateway connection is established, the gateway name and LU number are displayed at the right end of the status line, in positions 61 to 70. If there is no LU active, the LU number is 0 (zero), which means the gateway cannot assign an LU for this session.

Session Name messages

Session Name messages identify the current session. They appear in positions 62–69. These messages are not displayed for CUT sessions.

Note: In IRMALAN NETBIOS and IRMALAN IPX/SPX sessions, the Gateway Name/LU Number/Session Status message replaces the Session Name message. ■

Cursor Position messages

Cursor Position messages show the cursor location. They appear in columns 72–77. The message is represented as rrr (the row) and ccc (the column).

Session indicator

The session indicator identifies the current emulation session by its session ID. It is located in position 79 of the status line. The Session indicator is not displayed for CUT sessions.

Solving Problems

This appendix provides information to help you solve problems you may encounter while using an IRMALAN NETBIOS or IRMALAN IPX/SPX connection. It includes the following topics:

- Gateway connection failure messages

- Resolving installation and start-up problems

- Troubleshooting adapter and network problems

Information presented on the status line can help explain problems you may encounter when using emulation and file transfer. See Appendix A, "Status Line Messages," for an explanation of this information, including specific status line messages.

If you encounter a problem that persists or is not listed here, contact your system administrator for assistance.

When you have a question about a pull-down option or a dialog box, request help through the Help pull-down or by choosing the Help pushbutton for a given dialog box.
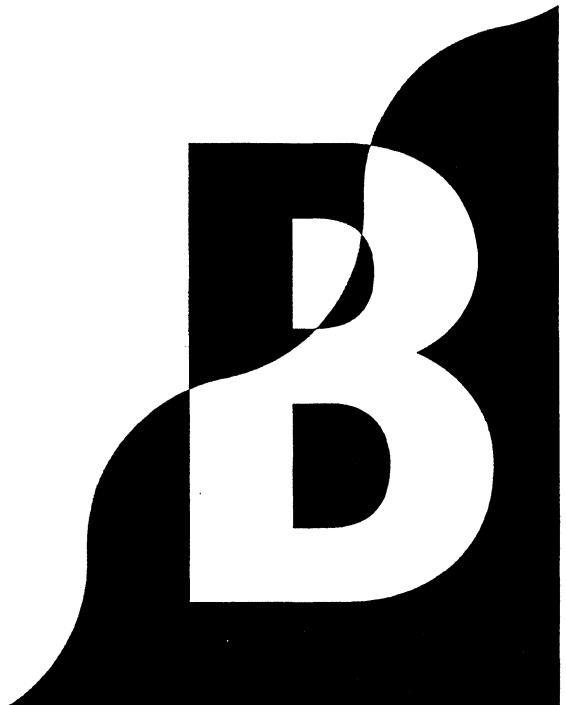
Gateway connection failure messages

Many of the error messages in this appendix provide the option to go off line or to retry an IRMALAN NETBIOS or IRMALAN IPX/SPX connection. Note the following:

- If you select Cancel from the error message dialog box to go off line, you can press the Online toggle key (Ctrl PgUp) when you have resolved the problem and want to retry a gateway connection.

- If you retry a gateway connection from an error message dialog box and IRMA WorkStation for Windows has more than one gateway name configured, the software tries the next gateway in the configuration list.

The following are error messages you may encounter when using IRMA WorkStation for Windows, and suggestions for correcting the problem.

Note: The *gateway:* notation refers to the name of the IRMALAN gateway returning the message. ■

gateway: **Access to the gateway is not allowed from this workstation. To go OFFLINE, select Cancel.**

The gateway configuration does not allow this workstation to access the gateway. To add this workstation, use the gateway configuration program to modify the restricted access parameters.

gateway: **No LAN sessions available. To go OFFLINE, select Cancel.**

This indicates that the maximum number of workstations that can access this gateway has been reached.

You can remedy this situation by doing one of the following:

- Use another gateway.

- If all gateways are busy, add a gateway to the network.

- Increase the number of supported workstations.

- Terminate other workstations' gateway connection.

To monitor network activity, you can use the IRMALAN DOS Network Utility, NETUTIL or NETUTILI.

gateway: **No LUs can be allocated at this time. To go OFFLINE, select Cancel.**

All LUs are in use at the gateway. Do one of the following:

● Use another gateway.

● If all gateways are busy, add a gateway to the network.

● Terminate other LU sessions.

To monitor network activity, you can use the IRMALAN DOS Network Utility, NETUTIL or NETUTILI.

gateway: **Gateway not found. To go OFFLINE, select Cancel.**

The gateway specified in the configuration file is not active.

Check the configuration file for the correct gateway name, or contact your gateway administrator to restart the gateway.

gateway: **The Password entered is invalid.**

The gateway connection could not be made because you entered an invalid password in the UserID/Password dialog box.

Enter a valid password.

gateway: **The UserID entered is invalid.**

The gateway connection could not be made because you entered an invalid user ID in the UserID/Password dialog box.

Enter a valid user ID.

gateway: **Unable to allocate requested LUs. To go OFFLINE, select Cancel.**

The gateway could not provide the LUs requested by the workstation because all of the requested LUs were not available. They are either in use or not configured at the gateway.

This message is displayed only if you specified the -p command-line option when you configured the software. Refer to Chapter 3, "Configuring for 3270 Emulation," for information about this command-line option.

User ID canceled, press ONLINE TOGGLE to try again.

Cancel was selected from the UserID/Password dialog box.

Press the Online/Offline toggle key ([Ctrl] [PgUp]) to retry a gateway connection or terminate the emulator.

IRMA WorkStation requires Standard or Enhanced mode Windows.

IRMA WorkStation for Windows does not run in Windows Real mode.

Exit Error: *xx*

If this message appears, it is normally preceded by an explanatory message.

If no message is present, and you cannot resolve the problem, contact your customer support personnel.

Cannot read configuration file: *xxxx*

The configuration file was either missing or an error occurred when it was read.

Delete the file, if it exists, and reconfigure. If you cannot resolve the problem, contact your customer support personnel.

ILAN_CE01 E   Not enough memory to start product

Your computer does not have enough free memory available to start the emulator. You may have too many other applications running for your PC's installed memory.

ILAN_CE03 E   No interface card or not enough resources available = *xxx*

The emulator was unable to initialize the LAN interface adapter. The *xxx* value is the LAN initialization error.

If any software is used with the LAN, be sure that the software is loaded before starting the emulator. (For example, if you are using the IBM Token Ring Network, you must run the DXM*x* drivers.)

Contact your LAN administrator to resolve the problem.

ILAN_CE04 E Invalid parameter specified *xx*

You entered an incorrect parameter in the Command Line Options edit box of the IRMA WorkStation for Windows 3270 Configurator application.

Reconfigure with valid parameters.

ILAN_CE27 E Initialization error, error= *xx*

For IRMALAN IPX/SPX connections, the IPX/SPX interface could not be found or did not respond. If you are running in Windows Standard mode, be sure the Novell TBMI driver has been started.

Resolving installation and start-up problems

During installation, your SYSTEM.INI and WIN.INI files are modified to point to the location of the IRMA WorkStation for Windows software. If these files are not updated correctly, or if they become corrupted at a later time, errors will occur when you start the IRMA WorkStation for Windows applications. The type of error that is reported is usually associated with the software's inability to locate the configuration file.

To avoid unnecessary problems, follow these guidelines:

● Perform the installation procedure as explained in Chapter 2, "Installing and Configuring the Software."

● Allow Setup to modify your system files.

● Do not modify the installation diskettes or the installed network copy.

If you do experience problems, use the following checklist to help resolve them:

● Ensure that the IRMA WorkStation for Windows directory is in your PATH statement. Windows limits the length of a PATH statement. Check your Windows documentation for the exact size allowed.

   Note: If your PATH statement is large and the IRMA WorkStation for Windows directory is not one of the first few directories, the start-up is slowed. ■

● Check your WIN.INI file for an entry similar to the following:

```
[IrmaWorkstation]
defaultpath=W:\IRMANWIN
privatepath=C:\IRMANWIN
FtProfile=
```

Make sure that the `defaultpath` entry matches the directory in your `PATH` statement. If you use a private directory, the `privatepath` entry must point to the directory you specified during the IRMA WorkStation for Windows installation. If you do not use a private directory, the `privatepath` entry does not exist.

In addition, make sure that the `[FONTS]` section has a DCATERM.FON and a DCAAPL.FON entry and that this file exists in your default path.

● Check your SYSTEM.INI file for an entry similar to one of the following:

```
[SNA_CE]                    (For NETBIOS installations)
Engine_name=ILAN_CE

[SNA_CE]                    (For IPX/SPX installations)
Engine_name=ILANI_CE
```

● The file IWWDEF.INI, which contains information similar to that in the following example, must exist in one or both of two places:

– In the directory where you installed the software, if you are not using a private directory.

– In the directory where you installed the software (the default path) as well as in the private directory, if you are using a private directory. The IWWDEF.INI file in the private directory is the significant file in this case.

The following example of IWWDEF.INI information shows IRMA Work-Station for Windows installed on the W: drive with the private directory on the C: drive, which is where the configuration file ILCI.CFG exists. This example is for IPX/SPX installations; NETBIOS installations use a configuration file named ILCN.CFG.

```
[location]
loc=W:\IRMANWIN
cfgfile=C:\IRMANWIN\ILCI.CFG

[connections]
conn=ILCI:
primary=ILCI

[applications]
app=CONF:EMU3:KBED:XFER:SCRP:PRNT:LAPI:HELP:

[group]
name=IRMA WorkStation for Windows

[files]
update=4014995  (this number will vary)

[settings]
userlevel=1
```

- Make sure the configuration file exists and has the name specified in the `cfgfile` entry in the IWWDEF.INI file. This entry is modified when you select a running configuration file using the 3270 Configurator application. Refer to Chapter 3, "Configuring for 3270 Emulation," for information on selecting the running configuration file.

Troubleshooting adapter and network problems

This section describes some problems you might encounter when operating in a LAN/Windows environment.

DMA conflicts with Windows

Some LAN adapters have DMA conflicts with Windows. If you are having trouble solving a LAN problem, try disabling DMA on your LAN adapter.

Gateway connection failures

If you have problems connecting to an IRMALAN gateway, add the -d parameter to the Command Line Options edit box in the Connection dialog box of the 3270 Configurator. See Chapter 3, "Configuring for 3270 Emulation," for more information on command-line options.

If you are still experiencing problems, try running the IRMALAN DOS Client software without Windows present. If this works, start IRMALAN DOS Client with Windows present (in a DOS box) to see if the problem occurs again.

If the IRMALAN DOS Client software does not work, your network drivers are probably not installed properly. Most networks have special drivers or newer driver versions that must be used for Windows. Refer to your network documentation for information on installing network drivers for Windows.

Note: Use this approach only to troubleshoot networking problems. ∎

Shared memory problems

Another common problem between Windows and LAN adapters is shared memory on the LAN adapter card. If you are experiencing unexplained application suspensions or system crashes, try adding the following statement in the [386ENH] section of your SYSTEM.INI file:

```
EMMEXCLUDE=A000-DFFF
```

You may be able to narrow this range to cover the area used by your LAN adapter.

**Insufficient
network buffers**

If you cannot connect to the gateway because your system is temporarily locked or the Do Not Enter message (X Clock or X()) is displayed on the status line, you may need to add or increase the NetHeapSize parameter setting. This parameter reserves memory for network buffers. The NetHeapSize parameter is in the [386ENH] section of your SYSTEM.INI file. Set the parameter as follows:

```
NetHeapSize=50
```

Modem Characteristics

If you want to use auto-dial with IRMA WorkStation for Windows, your modem must supply the clock signals during the command loading phase. In addition, you may need to program your modem so that it handles the CTS and DSR signals following the rules listed in this section.

Auto-dial support

IRMA WorkStation for Windows auto-dial support assumes that a complete dial string is entered. The auto-dial code appends a carriage-return line-feed sequence to the string. Consult your modem documentation for specific details.

For example, this could be a Hayes Smartmodem 2400™ dial string:

```
AT &D3 &Q1 DT7, 012345678
```

These dial string parameters are explained as follows:

- AT is the command prefix.
- &D3 tells the modem to enter command state when DTR drops.
- &Q1 tells the modem to enter the command mode (ready to receive dial commands) and then change to synchronous communication mode when the dial connection is made.
- The remainder is a standard Hayes AT dial command using tone dialing.

Auto-dial usage rules

The maximum size for the dial string is 40 characters and no modem responses are detected. IRMA WorkStation for Windows assumes that an attempt to auto-dial has failed if one of the following occurs:

- DSR stays on after the dial string has been sent.
- The connection time-out expires before DSR comes on, indicating the call is connected.

When issuing dial strings, IRMA WorkStation for Windows holds the modem interface signals Select Standby and Data Signal Rate Select off. The auto-dial code requires that the modem do the following:

- Accept dial commands in ASCII (8 data bits, no parity bit, 1 stop bit)
- Set CTS and DSR to on when ready to accept dial commands
- Generate clocks when ready to accept dial commands
- Drop DSR after accepting a dial command
- Set DSR to on again only when the dialed connection is made
- Change to synchronous mode after the dial-up has connected
- Change back to dial-command mode if DTR is dropped and raised again

SYSTEM.INI Parameters

This appendix describes the parameters used by IRMA WorkStation for Windows in the SYSTEM.INI file. These parameters define the following settings:

- Log and trace variables

- Code-conversion variables

- Token-ring variables
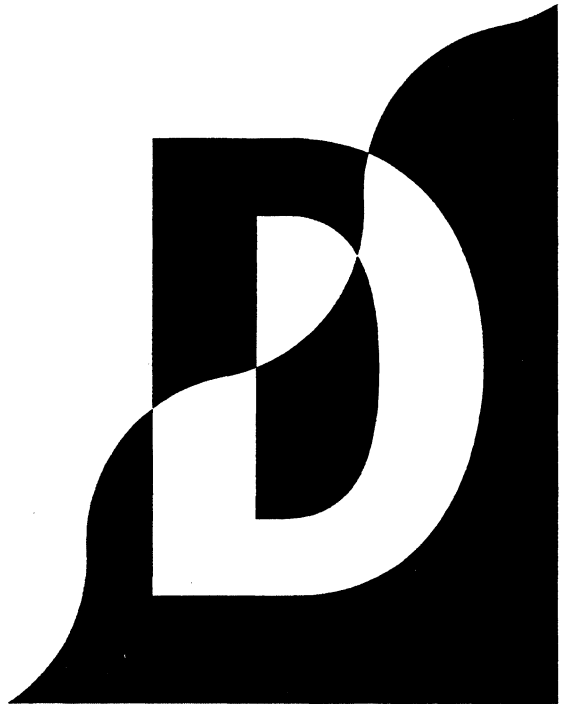
Log and trace variables.

The following SYSTEM.INI parameters define log and trace settings.

Note: These parameters are not applicable for TN3270, IRMALAN NETBIOS, or IRMALAN IPX/SPX connections. ■

COMLOG = *file* / T

This parameter defines the output file for error logs and audit logs. (Error logs are messages at severity level 12 or above; audit logs are messages below severity level 12.) If COMLOG is not defined or if the file specified cannot be opened, messages are sent to the screen.

The /T option controls truncation of messages. If /T is specified, the log file is truncated (closed) when it reaches its maximum size; further messages are sent to the screen. If /T is not specified, the log file is reset (deleted); a new log file is started for further messages. The maximum size of the log file is defined using COMLOGL.

Note: It is not possible to disable error log output. To disable audit log output, refer to the COMAUD variable described next. ■

COMAUD = *level*

This parameter controls audit logging. The *level* parameter specifies the minimum severity level of messages to be logged. If COMAUD is not defined, audit logging is disabled. Audit logs are sent to the same destination as error logs—to the file specified in the COMLOG statement or to the screen.

Range: 6–12

COMTRC = *file* [/P/6/V/L/A/T/2/D/C]

This parameter defines tracing for APIs.   Tracing provides a formatted hexadecimal dump of request and return control blocks flowing across the APPC, CSV, and Link interfaces.

Tracing output is sent to the file specified in *file*. The options used with this variable are defined as follows:

/P or /6	APPC
/V	CSV
/S	Node
/2	PVI
/D	DLC
/F	FMI (applicable for both FMI and SAA)
/L	Link
/A	High-level APIs except Link.
/T	Truncate the trace file when it reaches its maximum size. The trace file is closed and all further messages are lost. The maximum size of the trace file is defined using COMTRCL.
/C	Communications/Presentation Services Interface (C/PSI) API

You can combine options, such as /PS for APPC and Node tracing. There is no severity level associated with tracing; all CBs on a particular interface are either traced or not. However, the CSV DEFINE_TRACE verb provides run-time control over which particular interfaces are to be traced.

COMTRCL = *n*

This parameter defines the maximum size in kilobytes of the trace file specified in COMTRC or COMTRC2. When the trace file reaches this size, it is reset (deleted) and a new trace file is started for further messages. However, if you specify the /T option in COMTRC or COMTRC2, then the trace file is truncated when this size is reached; all further trace information is lost.

Range: 0–Available disk space

COMTRC2 = *file* [/P/6/V/L/A/T/2/D/C]

This parameter defines tracing for the C/PSI API and the NetWare for SAA connection link.

COMLOGL = *n*

This parameter defines the maximum size in kilobytes of the trace file specified in COMTRC or COMTRC2. When the trace file reaches this size, it is reset (deleted) and a new trace file is started for further messages. However, if you specify the /T option in COMTRC or COMTRC2, then the trace file is truncated when this size is reached; all further trace information is lost.

Range: 0–Available disk space

COMTRUNC = *n*

This parameter defines the maximum number of characters to be present in the hexadecimal dump of control blocks and data buffers in traces, as determined by COMTRC or COMTRC2. If this is not specified, there is no limit.

Range: 80–(unlimited)

CEIdleTimeout = *n*

This parameter defines the amount of time that the IRMA WorkStation for Windows Communications Engine should wait before terminating if no applications are running. A value of I (for indefinite) causes the engine to wait indefinitely; a value of 0 (zero) causes the engine to terminate immediately after the last application terminates.

Range: I (for indefinite) or 0–5000 seconds

Note that even if the value for this parameter is set to 0 (zero), it may take several seconds for the Communications Engine to disconnect from the Host.

Code-conversion variable

The following SYSTEM.INI parameter defines conversion table settings.

COMTBLG = *file*

This parameter defines the file to be used for the Type G user-specified conversion table. There is no default. If CSV conversion is called specifying table G and COMTBLG is not defined, an error is returned.

Token-ring variables

The following SYSTEM.INI parameters define token-ring settings.

AlternateTRAdapter = *n*

This parameter defines the alternate adapter. If the token-ring adapter is configured as alternate (as opposed to primary), then this variable must be set to 1 (one). If it is set to 0 (zero) or is not defined, then a primary adapter is assumed.

Range: 0–1

tr_int = *hh*

This parameter defines the interrupt used to signal to TR TSR (only used in 286 mode). *hh* represents a 2-digit hexadecimal number.

Range: 58–5f (The value 5c cannot be used.)

recvbufs = *n*

This parameter defines the number of receive buffers to use.

Range: 2–60

recvbufsize = *n*

This parameter defines the size of receive buffers to use.

Range: 256–2040

xmitbufs = *n*

This parameter defines the number of transmit buffers to use.

Range: 1–2

xmitbufsize = *n*

This parameter defines the size of the transmit buffers.

Range: 265–17954 (card-type dependent)

stations = *n*

This parameter defines the number of remote stations to support on this token-ring connection.

Range: 1–16

t1.tick.one = *n*
t1.tick.two = *n*
t2.tick.one = *n*
t2.tick.two = *n*
ti.tick.one = *n*
ti.tick.two = *n*

This parameter defines the token-ring DLC timers. Normally, these are not used. The defaults for these variables should not be changed except in unusual configurations, such as bridges.

ram = *hhhh*

This parameter defines the RAM segment. *hhh* represents a 4-digit hexadecimal number. This needs to be specified only if the shared RAM segment was specified (that is, the default value was overridden) when the IBM LAN Support Program was installed. In such a case, the new value should be defined here. This does not apply to Micro Channel PCs.

Range: A000–FFFF

International Considerations

This appendix explains considerations you should keep in mind if you are an international user of IRMA WorkStation for Windows. It covers the following topics:

- Choosing language support

- Choosing a keyboard profile
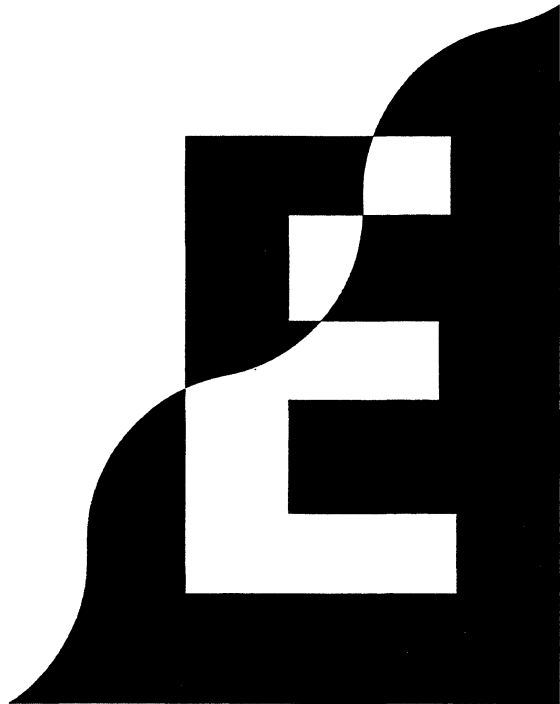
Choosing language support

When you install and configure the software, you must specify the language support that is appropriate for the PC and host. There are a number of languages from which you can choose. Table E-1 lists the country codes and corresponding languages supported by IRMA WorkStation for Windows.

Table E-1.   Country codes

Country code	Language
AU	Austrian
BE	Belgian
CE	English (US) keyboard for the Canadian French host character set (non-CECP only)
CF	Canadian French keyboard for the Canadian French host character set (non-CECP only)
DE	Danish
EB	English (US) keyboard for the Canadian Bilingual host character set
F5	French Azerty 105 (non-CECP only)
FB	Canadian French keyboard for the Canadian Bilingual host character set
FI	Finnish
FR	French Azerty
GR	German
IT	Italian
LA	Latin American
NB	New Belgian (non-CECP only)
NE	Netherlands
NO	Norwegian
NS	New Spanish (non-CECP only)

continued

Table E-1. Country codes (cont.)

Country code	Language
PO	Portuguese
RF	Swiss French RPQ (non-CECP only)
RG	Swiss German RPQ (non-CECP only)
SF	Swiss French
SG	Swiss German
SP	Spanish
SS	Spanish Speaking
SW	Swedish
UD	User Defined (non-CECP only)
UK	English (UK)

Except where noted in the table, the languages can be translated to Country Extended Code Page, or CECP, character sets.

If you want CECP translation, you must specify CECP before you choose the language. If you choose the language first and then specify CECP, your selection is canceled.

Choosing a keyboard profile

To be able to choose a keyboard profile for your IRMA WorkStation for Windows PC, you must understand the format of the keyboard profile name.

International keyboard file names have the following format:

XXYNNN.KBD

The individual elements in the keyboard file name are explained in Table E-2.

Table E-2. International keyboard file name elements

Element	Explanation
XX	This is the country code; for example, UK.
Y	This is the CECP indicator. There are two possible values: C CECP character set. N Non-CECP character set.
NNN	This is the number of keys on the keyboard; for example, 84 or 102.
.KBD	This is the file name extension.

Keyboard profiles based on a CECP character set usually have more characters mapped on the keyboard than those based on non-CECP character sets. You can use the Keyboard Editor's Key List Editor feature to map any CECP characters you want on your keyboard profile. For non-CECP character sets, only the existing characters on the non-CECP keyboard profile are valid. For more information about the Key List Editor, refer to Chapter 7, "Using the Keyboard Editor."

Using IRMA WorkStation for Windows with Other LAN Products

This appendix explains how to set up IRMA WorkStation for Windows to operate with the following LAN products:

- IBM PC LAN Program

- 3COM 3+SHARE
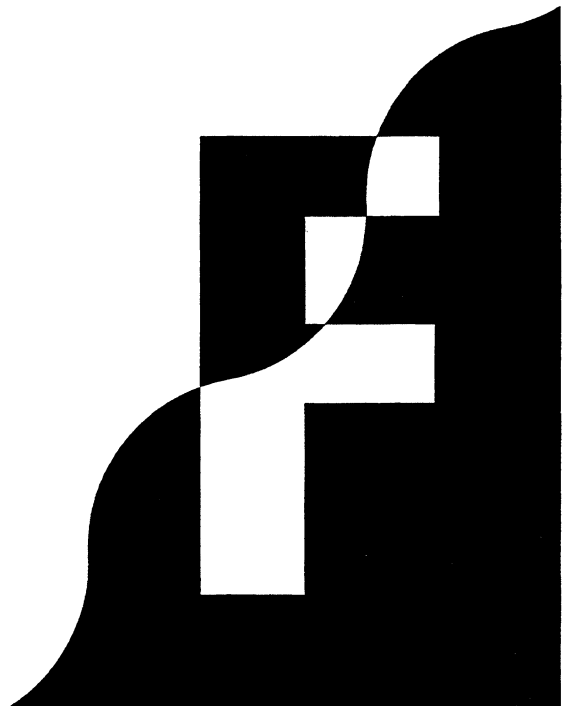
IBM PC LAN Program

This section describes how to use the IBM PC LAN Program for the IBM Token-Ring and PC Network when using IRMA WorkStation for Windows over an IRMALAN NETBIOS connection.

You must have the NETBIOS interface present. For an IBM PC Network, the NETBIOS interface is provided by the LAN interface hardware.

Consult your IBM documentation or your LAN administrator to determine the requirements of your environment. In the majority of cases when IRMA WorkStation for Windows is used on the IBM Token-Ring or IBM PC Network, the Network Program software is installed on your PC.

IRMA WorkStation for Windows is compatible with the Redirector, Receiver, Messenger, and Server configurations of the Network Program. However, performance and memory requirements may dictate which configuration is best to use. We recommend that you run with the Network Program configured as either a Redirector or Receiver for optimum performance. IRMA WorkStation for Windows uses network resources, in addition to those required for the Network Program.

NETBIOS resources are shared with the Network Program. You need to increase the /CMD and /SES parameters of the NET START command when starting the Network Program. Increase these parameters as follows:

/CMD:n + 6
/SES:n + 2

In this command, n is the number of sessions required by your Network Program configuration and any other NETBIOS applications you want to use.

Refer to the *IBM Local Area Network Support Program* manual for information on installing the NETBIOS interface driver.

3Com 3+SHARE

This section applies only when you use IRMA WorkStation for Windows with an IRMALAN NETBIOS connection. It explains the modifications you must make when using a 3Com 3+SHARE LAN.

Make sure you are using version 1.2.1 or newer of the 3Com 3+SHARE software.

▼ **Caution:** The /M parameter enables PC LAN Program multi-tasking and should not be used with the software. ■

Follow these steps to run IRMA WorkStation with 3Com 3+SHARE:

1 If you are using 3Com 3+SHARE software, make sure the PRO.SYS driver in the CONFIG.SYS file reads as follows:

```
DEVICE = PRO.SYS 16 2 8
```

The first parameter, 1 6, sets the maximum number of processes that PRO.SYS supports. The second parameter, 2, tells the LAN how much time to allocate to the foreground task. The third parameter, 8, specifies how much time to allocate to the background task.

2 Load 3Com NETBIOS through the AUTOEXEC.BAT file as follows:

NETBIOS /C

Using APL

This chapter describes how to set up IRMA WorkStation for Windows to use APL. It includes the following information:

- What is APL?

- A description of the DCA APL ASCII character set

- How to use APL during a display session

What is APL?

APL (which means "A Programming Language") is a general-purpose language characterized by unusual characters such as the Greek alpha and gamma. You use its diverse applications in commercial data processing, system design, mathematical and scientific computation, and data bases. You can also use it for teaching subjects such as mathematics.

DCA's APL ASCII character set

The IBM ASCII character set does not include APL characters and symbols. The APL character set from DCA is compatible with IRMA WorkStation for Windows and supports IBM's APL-1 and APL-2 character sets. It contains the complete set of APL symbols and characters as well as standard PC characters.

DCA's APL ASCII character set leaves most PC ASCII characters unchanged. Only characters rarely used for programming, such as the playing-card symbols, musical notation symbols, and some foreign characters, have been replaced by the special symbols.

Note: Because of the APL character placements in the ASCII character set, some international languages cannot be displayed properly unless you use a VGA or an EGA with more than 64 KB of memory. This allows you to use two full character sets. ■

Using APL during a display session

During a display session, press [Alt][Backspace] to toggle between the IRMA WorkStation emulator profile and the APL profile. Press the APL toggle sequence once to enter APL mode. When the letters APL appear on the status line, you can enter APL characters.

Figure G-1 shows an example of the 101-key APL keyboard template.
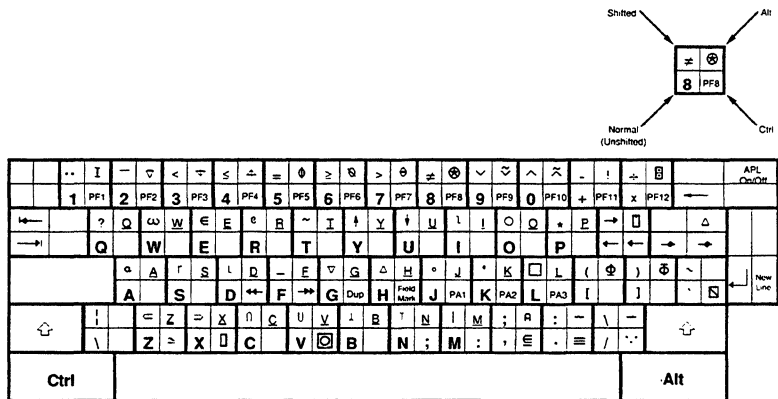
Figure G-1.   Example of a 101-key APL keyboard

Note: You can use the Keyboard Editor to remap the APL toggle sequence, if you want. For instructions on remapping key functions, see Chapter 7, "Using the Keyboard Editor." ■

You can enter both APL and normal characters on the same screen, line, or field. If the host does not understand APL characters sent from the workstation, it sends an error message. These error messages are explained in the user's guides for the application.

Exiting APL mode

To exit APL mode, press the APL toggle sequence, Alt Backspace. The APL message disappears from the status line.

Customer Support Information

Digital Communications Associates, Inc. makes every effort to ensure that the product you have purchased is of excellent quality in all respects. All hardware and software products have been tested and subjected to strict quality control procedures. If you need assistance with the product, contact your DCA distributor or DCA Technical Support.

This section includes the following information:

- Help information
- Environmental Description form
- Software registration instructions
- Diskette replacement policy
- Limited warranties and limitation of liability
- U.S. Government restricted rights
- Statement of copyright restrictions

Calling DCA for assistance with a product

DCA support personnel are available Monday to Friday to help you with any problems that may occur with your DCA product.

Canadian and U.S. customers can contact DCA Technical Support personnel at:

Digital Communications Associates, Inc.
Technical Support
1000 Alderman Drive
Alpharetta, Georgia 30202-4199

Phone: 1-404-740-0300

Support personnel are available from 8:30 A.M. to 8:00 P.M. EST, Monday–Friday.

International customers should contact their dealers or authorized DCA distributors. You may telephone the DCA European Support Center in Shannon, Ireland, if you need your distributor's name.

Digital Communications Associates (Ireland) Ltd.
D1 Shannon Industrial Estate
Shannon, County Clare
Ireland

Phone: 353-61-360 666
Telex: 852-72160

Before you call for assistance

Before you call DCA for assistance with a product, make sure that you have read the user's guide, reference manual, or other documentation for your system and the DCA product. The documentation should provide answers to most questions. If you still need help with the product, check to see that your computer system meets the minimum hardware and software requirements necessary to use the product. This information is included in the product documentation. For details of your system configuration, contact your company's internal support group or the dealer from whom you purchased the system. If you need further assistance, contact DCA Technical Support.

When you call Technical Support

DCA uses a computerized call tracking system and issues a customer ID number for all incoming support calls. If you have been assigned a customer number, please have it ready for the support representative when you call.

In addition, to help the support engineer assist you most efficiently, be prepared when you call.

If possible, when you call, be at the computer with the DCA product installed, connected, computer on, and software loaded.

Be ready to answer the following questions:

- Did the hardware and software work correctly before?

- Has any component in the computer or network system been changed?

- Can you reproduce the sequence of steps or the application which demonstrates the problem?

- Did any error messages appear? If so, exactly what were they?

Finally, have the "Environmental Description Form," found on the next page, ready when you call.

Note: You may want to make additional copies of the "Environmental Description Form" to keep track of changes to your system or network. ∎

Environmental Description Form

Product Name:_____   Version: _____

Hardware Version _____ Firmware Version _____

Serial Number (if applicable):_____

Problem Description: _____
_____
_____
_____
_____
_____
_____
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_____
_____

Problem Reproduction:_____
_____
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_____
_____

Computer Brand Name:_____
Model Number:_____ RAM (Memory): _____ KB
Operating System Name & Version: _____
Video Adapter Board:_____
Video Type:_____
Printer/Plotter: _____
Expansion RAM Board: _____
Hard Disk System: _____
Other Adapters or LAN: _____
_____
_____
_____

Software registration

A Warranty Registration card is included with all DCA software products. You must complete and return this card to DCA in order to validate the product warranty and to receive notice of software updates.

Software updates

Periodically, updated versions of certain programs are available from DCA at a modest charge. If your Warranty Registration card is on file, you will be notified of these product updates.

Limited 90-day warranty– diskettes and printed materials only

DCA guarantees its software diskettes and printed materials to be free of defects for ninety days (90 days) from the date of purchase. DCA will replace defective diskettes and printed materials free of charge during the limited warranty period. After the 90-day limited warranty period, damaged diskettes will be replaced with the current version of the product at the upgrade price.

Replacing software diskettes

To receive a replacement diskette, contact DCA Technical Support in the U.S. or your international distributor. If calling DCA, ask to speak to a support engineer who will verify the problem and arrange to replace the diskette, if necessary. Return the diskette, postage prepaid, by means of a traceable carrier, to DCA at one of the following addresses. If a Warranty Registration card is not already on file, the warranty claim must be accompanied by a completed Warranty Registration card and proof of purchase within the last 90 days. DCA does not accept diskettes which have been sent C.O.D. In addition, you must insure any item being returned to DCA. DCA is not responsible for any items lost or damaged in transit.

U.S. and Canadian customers should mail the diskette, postage prepaid, to:

Digital Communications Associates, Inc.
Technical Support
1000 Alderman Drive
Alpharetta, GA 30202-4199

International customers should contact their dealer or distributor to replace a diskette.

Replacement diskettes are shipped by a method of DCA's choosing. If you desire a specific form of conveyance, or are located outside the USA, you must bear the cost of shipment. Please use a street address as a return address; DCA does not ship items to a Post Office box.

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